SOUTHERN
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SOUTHERN TEXTILE BULLETIN

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Textile Cost Perspective and its Relation to Dividends

By H. D. Martin.

IN order to have a good cost perspective, the manufacturer must have a clear vision of things all of the way up the line of activities. Textile costs become interesting in proportion to the understanding of the details causing the cost, and the method of ascertaining the costs. In a large plant there may be over one hundred different cost details in connection with one line of goods put through the plant. Other goods will have less details because they do not go through all of the processes. When a mill manufactures a large variety of goods and in many different patterns, and with various mixtures of raw materials, the summary of the details will mount up into the thousands.

Again manufacturing costs become interesting in proportion as they foster dividends and spread prosperity throughout the country. This cannot be done unless the goods are made at a cost which will create a popular demand for the goods.

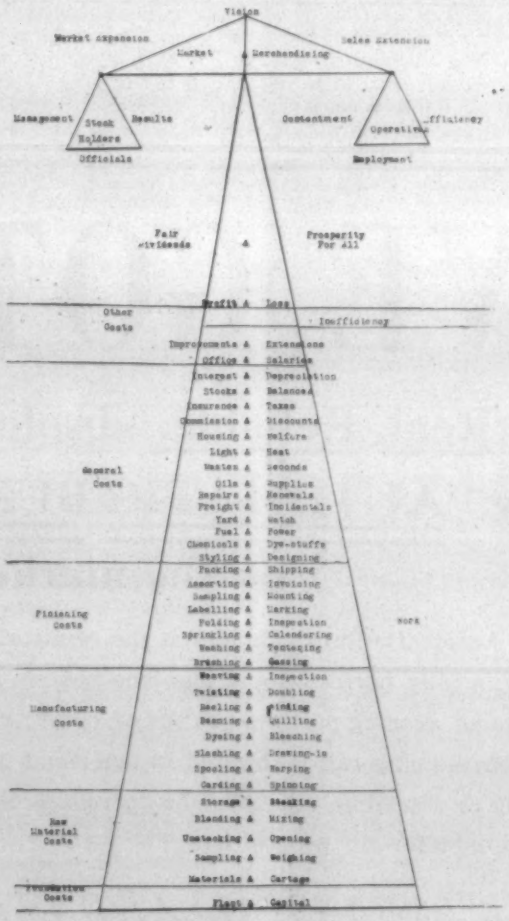
A careful study of the form accompanying this paper brings out and illustrates an interesting perspective with reference to costs, and what details go to make up the gross cost of manufacturing.

Cost details run along and mount up step by step very much in pairs as shown by the diagram accompanying this paper. For example, the plant and the money go together as the foundation upon which to upbuild the manufacturing organization. The plant costs money. Without money there could not be a plant. Money without a plant does not create a manufacturing establishment. Going up the scale of our perspective step by step we find materials and cartage, sampling and weighing, storage and stacking, and so forth, all of which follow in succeeding pairs all of the way up the scale until we come to the profit and loss account.

On the left hand side of the diagram there are seven (7) groups laid out to show what may become of the money as applied to costs and what is left over afterwards in connection with a plant as follows:

1. The cost of the foundation.
2. The cost of the raw materials.
3. The cost of manufacturing.
4. The cost of the finishing.
5. The cost of the general matter.
6. The cost of the other things not anticipated.
7. The disbursements in dividends.

With reference to the sixth group, it is usually the case that there will be some items of costs which are not always anticipated, and which cannot be previously classified. They are usually caused by unforeseen circumstances, such as accidents, the elements, epidemics, and so forth. Another series of things which belong to this group are the excessive costs of the natural operations of the plant and which were not counted upon in the estimation of the costs made out and upon which selling prices had to be based. This excessive cost may also be on account of the inefficiency of certain departments and individuals.



On the right hand side of the diagram are shown three groups. First, comes the service which must be based upon working efficiently. Efficient work starts with the foundation of the organization and extends all of the way up to the group called efficiency. Inefficiency is caused by lack of service or good work. The last group, viz., prosperity, depends upon the service rendered. The same as also does the profit and loss account.

Profit and loss, and the dividends and prosperity are governed by the costs. The higher the costs mount, the smaller will be the profit, and the less the prosperity. As the dividends occupy the small end of the perspective, the costs do not need to mount very much before the point allotted to dividends will rapidly grow smaller and thinner.

Another very interesting illustration is the balance drawing which straddles the point of the detail cost perspective. On the one hand, we have the owners of the plant or the various stockholders held in the balance, while on the other hand, we have the labor held in the balance. One is dependent on the other. Between the mill owners and the laboring problems there is the market, and the merchandising which makes the business good or bad. Both the market and the merchandising are represented within the long arms astride the point of the perspective and which support the mill owners and the laboring problems. The peak of the load is surmounted by the clear vision of good management. The expansion of the market is limited by the weight of force sales extension.

When conditions are right, and everybody is working properly, the costs remain normal, contentment reigns, and there is a perfect balance, between all the factions as shown by the combination in form. The whole system is a matter of putting the money into the right foundation and then working the organization right, step by step, until the goods are shipped. It all amounts to the right use of labor at every step of the manufacturing stages. Every process, all of the materials at each process; every effort of labor; and all of the time put into the service from the bottom and upward; represents just so much money. If all has been economically conducted the costs will be kept down within the bounds of close competition. After all the work is done, whatever profit may accrue can be distributed into dividends. Or if the profit is large some of it may be used to put back into the plant for improvements or extensions. Otherwise if costs are too high there will be a loss, and a corresponding shrinkage of the share values.

American Wool Yarn Mill in Tientsin.

An American company is now erecting in Tientsin a plant equipped with the latest American machinery for the spinning of Chinese wool into yarn, and possessing facilities for dyeing the wool. This represents the first effort to produce locally a standard quality of wool yarn properly dyed for use in the rapidly growing carpet industry of North China. During 1923, exports of carpets and rugs from Tientsin totalled 3,500,000 square feet worth $2,500,000, and continues to be large so far in 1924, Commercial Attache Julean Arnold, Peking, reports to the Department of Commerce.

Analysis of Woven Fabrics

By Dixie Weaver.

PRACTICALLY there are two methods of determining the make or weave of any given cloth, that is, by analysis and by synthesis. By the former method is meant, pulling a cloth to pieces, thread from thread, pick from pick; and by later by building a cloth up according to the principles of interlacing, which experience enables the designer to detect in the cloth that it is desired to reproduce.

The second method is quite out of the reach of the inexperienced. They must fulfill the laborious task of following every end and pick throughout the cloth, whereas the experienced person would pull a thread or pick out to confirm his expectations respecting the make, and proceed at once to build up his cloth. More often than not, the experienced judge the make of a cloth from the appearance alone; thus the false efforts of would-be analysts simply pulling cloths to pieces is fully demonstrated. Of considerable greater service is the experience gained by experiment with the various principles of textile design.

Let the reader suppose there is before him a pattern which it is desired to reproduce, and of which nothing is known. Then the first consideration will be—is it single, a backed, or a double cloth? This, as a rule, can readily be decided by pulling out a few threads and picks, and observing whether any of them keep on one side of the fabric or not. If one series, say, of threads, form the face, and another series of threads the back, while the picks interweave both face and back, then the fabric is backed with warp, and it will be necessary to find not only the face weave, but also the backing ties.

Filling might be used as backing instead of warp, when there would be two series of filling threads, and one of warp, and the interweaving of each must be obtained as in the case of the warp backing. Should there be both, backing warp and filling, then the fabric will usually be a double cloth, in which case three points must be decided: firstly, the face weave; secondly, the back weave, and, thirdly, the system of tying the back cloth to the face. Having decided by brief examination under which heading the pattern to be analyzed comes, the analyst should proceed in the manner to be laid down further.

It would be no difficult matter to draw up a list of instruments serviceable to the analyst costing considerable money, but instruments will never make a successful analyst; the following apparatus is useful and all that is necessary: The pick glass is needed. The glass should possess fair magnifying power, and in order to insure this when purchasing, the glasses presented for examination should be compared with some of known excellence. A pair of curved or straight scissors, a sharp knife, and a pair of tweezers to catch hold of any required thread, along with white cardboard upon which to firmly hold the pattern, design paper, drawing pins, black and white thread, small scales and a few colored pencils, complete the list.

Now for the analysis: in such structures as twills, sateens, coverts, etc., in which one system of threads is two-fold and the other single; the two-fold is warp. If one system of threads be softer in twist than the other, the softer material is usually the filling. Usually the filling is not only softer in twist than the warp, but also thicker. When one material is found to be cotton and the other wool, the cotton material is, with few exceptions, the warp. The conditions of weaving are such that the yarn employed as warp must possess sufficient strength and elasticity to stand the strain imposed, whereas, any material may be employed for filling which will hold together while the shuttle is carrying it across the open warp threads. Therefore, if one system of warp threads are stronger than the other, although alike in other respects, the stronger material will almost invariably be the warp.

In most cloths the warp threads will be straighter than the filling. During both weaving and finishing the filling is allowed to contract more than the warp on account of tension being more readily applied lengthwise to the piece.

In almost all cloths of a twill character the direction of the twill is more toward the upright or warp direction than to the horizontal.

As colored threads are more economically introduced into a cloth as warp than filling, if a cloth contains a colored stripe, the direction of the warp is thereby indicated.

Having decided which is warp and which is filling, the analyst should proceed as follows: First, pull out a few picks, so that any thread may be pulled out at pleasure; second, pull out a few threads so that any pick may be pulled out at pleasure. Now placing the pattern upon a black ground, if the sample happens to be white material, and, of course, use a white ground for black material, then with the aid of a dissecting pin endeavor to separate the first thread or pick from its neighbor, but still it remains interplacing with the warp or filling, when the order of interlacing may possibly be

(Continued on Page 34)

Textile Operating Executives of Georgia to Meet

The spring meeting of the Textile Operating Executives of Georgia will be held at the Cecil Hotel, Atlanta, Ga., on Tuesday, March 18, it is announced by General Chairman Carl P. Thompson, superintendent of the Trion Company, Trion, Ga.

This organization is composed of the operating executives—the superintendents and overseers—of the Georgia mills, and has been in operation for something over a year, having held two discussion meetings.

The meeting in Atlanta next month will be devoted to the discussion of the carding and spinning departments of the mill. Oscar D. Grimes, general manager of the Athens Manufacturing Company, and chairman of the board of governors of the Southern Textile Association, was head of the committee which drafted the questions on carding, and W. L. Phillips, superintendent of the Social Circle (Ga.) Cotton Mill Company, and his committee prepared the spinning questions for the questionnaire. This questionnaire, which will form the basis of the discussion at the meeting, is appended hereto.

This questionnaire has been sent to each superintendent in Georgia, and it is requested that they send in their replies to same as soon as possible to Robert W. Philip, secretary-treasurer, 1017 Grant Building, Atlanta. The committee desires these replies to assist them in preparing their program, although no mill's nor superintendent's names will be used in connection with the answers made to the questionnaire.

The first session will open at 9:30 o'clock on the Cecil roof garden, it is announced by Mr. Philip, and the morning session will be devoted to discussion of the carding department. A "Dutch" luncheon will be served following which the discussion will be taken up of the spinning room, thus devoting a session to carding and one to spinning.

A good attendance of Georgia mill men is anticipated; and Secretary Philip announces that mill men from other States will be welcomed as visitors, and persons representing concerns allied with the textile industry may also attend as guests.

Anyone other than Georgia mill men who anticipates attending the meeting is requested to notify Mr. Philip in order that arrangements may be made in connection with the luncheon.

The questionnaire to be discussed follows:

Carding and Spinning Questionnaire.

Please give the following information concerning your plant: Length and grade of cotton used; number of spindles; number of looms. What is the finished product of your mill?

Opening.

1. Do vertical openers damage the staple so that the strength of the yarn is decreased?
2. What advantage do you get by opening cotton and letting it stand for one or more days before feeding into openers?
3. What is the best method of starting new cotton into the mill in the Fall, provided you have no old cotton on hand to mix with the new?
4. Do you believe it pays to install grids similar to the English cleaning trunk in the suction line?
5. On your class of work, what method of opening cotton have you adopted as the best?

Picking.

1. What settings on the blade beaters and Kirschner beater do you find best for obtaining breaking strength? For obtaining cleanliness? Why?
2. What is your system of oiling and cleaning pickers?
3. Have you tried ball bearings on the aprons? If so, what improvements were shown?
4. How much difference in the variation in the weight of the finished roving have you found by using finisher laps with two pounds variation allowed, in comparison with laps with one pound variation allowed, in the total weight of the lap?

Carding.

1. How often do you grind your cards?
2. What percentage of variation do you have in card sliver before and after stripping?
3. What is your experience with different settings on the feed plate to licker-in, with reference to breaking strength and cleanliness? Does a light or heavy tap affect the setting? What setting is best on the flats to cylinder?
4. Have you made any experiments in dcereasing or increasing the speed of the licker-in? If so, what results were obtained?
5. What is your system of oiling and cleaning cards?

Drawing.

1. What system of oiling and cleaning drawing frames do you use?
2. Do you creel your drawing all at one time, or as the cans run out? Which is better? Why?
3. Which do you find best for your work: one, two or three processes of drawing? Why?
4. If you are using one process of drawing, what is your front roll speed? Has this been reduced since starting to use one process of drawing?

Fly Frames.

1. What is your system for oiling and cleaning fly frames?
2. What drafts would you use on frames for best results, and what benefit would these be to your spinning?
3. Where is the best place in the slubbers, intermediates and fly card room to make a change in order to maintain even numbers?
4. What type of cone belt have you found most satisfactory?
5. How do you prevent oil, oily

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Coal Deterioration

The loss by deterioration of coal at ordinary temperatures is small when compared with that caused by rapid oxidation at elevated temperatures and the loss by spontaneous ignition.

To overcome the hazards of self-heating and spontaneous combustion, various means of storage have been suggested, such as storing under water or in an atmosphere of carbon dioxide; screening the coal and storing only large sizes; cooling the coal pile by means of ventilating pipes; covering the coal pile with sand or with a layer of fine coal to prevent breathing of the heap, and so forth. Many of these methods, according to the United States Bureau of Mines, do more than good, and others are prohibitive on account of their cost.

The tendency of coals to fire spontaneously differs with their age, the younger coals being the most dangerous. No case has been recorded in which anthracite fired spontaneously, even fines and slack storing safely. At the other extreme is lignite, which cannot be stored, even in lumps, with safety, except under water.

Between these two extremes are the various grades of bituminous coals, the class that is most commonly stored. The liability of different bituminous coals to fire varies widely on account of differences in the coal; but, broadly speaking, the bituminous coals of the eastern part of the United States store better than those of the Middle West. These, in turn, are safer to store than the sub-bituminous coals of the intermountain region.

While the tendency to fire will vary widely in any one class of coal, generally speaking, the higher the rank the less the danger of fire and the less the deterioration in storage. The classification as to self-heating coincides with the classification of coals, beginning with lignite as the most dangerous, ranging through sub-bituminous, bituminous, semi-bituminous and anthracite as the least prone to spontaneous combustion. The presence of fines in a coal pile should be avoided. Coal should be handled as little as possible and should be screened wherever practicable before storing.

Experiments show that with the same coal, moist air will give a lower "critical," or spontaneous-combustion temperature, than dry air. Therefore wetting the pile to retard heating is not good practice unless the coal is completely immersed.

Instead of hastening spontaneous combustion, partly oxidized coal seems to act as a deterrent when mixed with fresh coal. It appears that the danger in mixing two grades, or in storing coal on the same pile at different times, arises from physical rather than chemical causes. If no heating has occurred at the surface of the heap, it is safe to pile more coal on top, provided there is no accumulation of fines at the contact of the new and old coal.

CLARK'S TABLES

of Manufacturing Margins on Knitting Yarns

Tables below are compiled by deducting from net returns from yarn sales the total cost of cotton.

NET RETURNS for weaving yarns are selling prices less 5 per cent commission, 3 per cent discount and freight.

TOTAL COTTON COST is price of cotton with cost of 15 per cent waste added or is the cost of cotton per pound of yarn.

MANUFACTURING MARGIN is **NET RETURNS less TOTAL COTTON COST** and is the amount that is left to cover wages, salaries, power, supplies and all other overhead.

TO USE TABLES—Find selling price of yarn on top line and price of cotton on side and the figure in square caused by their intersections is the manufacturing margin.

Table No. 1

Cost of Cotton	Cotton Plus Waste	Price of Yarn / Price of Yarn Less 5% & 2% & 2% & .65 frt.	31 / 27.63	32 / 28.54	33 / 29.46	34 / 30.37	35 / 31.28	36 / 32.20	37 / 33.11	38 / 34.02	39 / 34.93	40 / 35.85	41 / 36.76	42 / 37.67	43 / 38.58	44 / 39.49	45 / 40.40	46 / 41.32	47 / 42.23
12	14.12		13.51	14.42	15.34	16.25	17.16	18.08	18.99	19.90	20.81	21.73	22.64	23.55	24.40	25.37	26.28	27.20	28.11
13	15.29		12.34	13.25	14.17	15.08	15.99	16.91	17.82	18.73	19.64	20.56	21.47	22.38	23.29	24.20	25.11	26.03	26.94
14	16.47		11.16	12.07	12.99	13.90	14.81	15.73	16.64	17.55	18.46	19.38	20.29	21.20	22.11	23.02	23.93	24.85	25.76
15	17.65		9.98	10.89	11.81	12.72	13.63	14.55	15.46	16.37	17.28	18.20	19.11	20.02	20.93	21.84	22.75	23.67	24.58
16	18.82		8.81	9.72	10.64	11.55	12.46	13.38	14.29	15.20	16.11	17.03	17.94	18.85	19.76	20.67	21.58	22.50	23.41
17	20.00		7.63	8.54	9.46	10.37	11.28	12.20	13.11	14.02	14.93	15.85	16.76	17.67	18.58	19.49	20.40	21.32	22.23
18	21.18		6.45	7.36	8.28	9.19	10.10	11.02	11.93	12.84	13.75	14.67	15.58	16.49	17.40	18.31	19.22	20.14	21.05
19	22.35		5.28	6.19	7.11	8.02	8.93	9.85	10.76	11.67	12.58	13.50	14.41	15.32	16.23	17.64	18.05	18.97	19.88
20	23.53		4.10	5.01	5.93	6.84	7.75	8.67	9.58	10.49	11.40	12.32	13.23	14.14	15.05	15.96	16.87	17.79	18.70
21	24.71		2.92	3.83	4.75	5.66	6.57	7.49	8.40	9.31	10.22	11.14	12.05	12.96	13.87	14.78	15.69	16.61	17.52
22	25.88		1.75	2.66	3.58	4.49	5.40	6.32	7.23	8.14	9.05	9.97	10.88	11.79	12.70	13.61	14.52	15.44	16.35
23	27.06		.57	1.48	2.40	3.31	4.22	5.14	6.05	6.96	7.87	8.79	9.70	10.61	11.52	12.43	13.34	14.26	15.17
24	28.23		----	.31	1.23	2.14	3.05	3.97	4.88	5.79	6.70	7.62	8.53	9.44	10.35	11.26	12.17	13.09	14.00
25	29.41		----	----	.05	.96	1.87	2.79	3.70	4.61	5.52	6.44	7.35	8.26	9.17	10.08	10.99	11.91	12.82
26	30.59		----	----	----	----	.69	1.61	2.52	3.43	4.34	5.26	6.17	7.08	7.99	8.90	9.81	10.73	11.64
27	31.76		----	----	----	----	----	.44	1.35	2.26	3.17	4.09	5.00	5.91	6.82	7.73	8.64	9.56	10.47
28	32.94		----	----	----	----	----	----	.17	1.08	1.99	2.91	3.83	4.73	5.64	6.55	7.46	8.38	9.29
29	34.12		----	----	----	----	----	----	----	----	.81	1.73	2.64	3.55	4.46	5.37	6.28	7.20	8.11
30	35.29		----	----	----	----	----	----	----	----	----	.56	1.47	2.38	3.29	4.20	5.11	6.03	6.94
31	36.47		----	----	----	----	----	----	----	----	----	----	.29	1.20	2.11	3.02	3.93	4.85	5.76
32	37.65		----	----	----	----	----	----	----	----	----	----	----	.02	.93	1.84	2.75	3.67	4.58
33	38.82		----	----	----	----	----	----	----	----	----	----	----	----	----	67.	1.58	2.50	3.41
34	40.00		----	----	----	----	----	----	----	----	----	----	----	----	----	----	.40	1.32	2.23
35	41.18		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	.14	1.05

Table No. 2

Cost of Cotton	Cotton Plus Waste	Price of Yarn / Price of Yarn Less 5% & 2% & 2% & .65 frt.	48 / 43.15	49 / 44.06	50 / 44.97	51 / 45.88	52 / 46.79	53 / 47.70	54 / 48.61	55 / 49.53	56 / 50.45	57 / 51.36	58 / 52.27	59 / 53.18	60 / 54.09	61 / 55.00	62 / 55.92	63 / 56.83	64 / 57.74
16	18.82		24.33	25.24	26.15	27.06	27.97	28.88	29.79	30.71	31.63	32.54	33.45	34.36	35.27	36.18	37.10	38.01	38.92
17	20.00		23.15	24.06	24.97	25.88	26.79	27.70	28.61	29.53	30.45	31.36	32.27	33.18	34.09	35.00	35.92	36.83	37.74
18	21.18		21.97	22.88	23.79	24.70	25.61	26.52	27.43	28.35	29.27	30.18	31.09	32.00	32.91	33.82	34.74	35.65	36.56
19	22.35		20.80	21.71	22.62	23.53	24.44	25.35	26.26	27.18	28.10	29.01	29.92	30.83	31.74	32.65	33.57	34.48	35.39
20	23.53		19.62	20.53	21.44	22.35	23.26	24.17	25.08	26.00	26.92	27.83	28.74	29.65	30.56	31.47	32.39	33.30	34.21
21	24.71		18.44	19.35	20.26	21.17	22.08	22.99	23.90	24.82	25.74	26.65	27.56	28.47	29.38	30.29	31.21	32.12	33.03
22	25.88		17.27	18.18	19.09	20.00	20.91	21.82	22.73	23.65	24.57	25.48	26.39	27.30	28.21	29.12	30.04	30.95	31.86
23	27.06		16.09	17.00	17.91	18.82	19.73	20.64	21.55	22.47	23.39	24.30	25.21	26.12	27.03	27.94	28.86	29.77	30.68
24	28.23		14.92	15.83	16.74	17.65	18.56	19.47	20.38	21.30	22.22	23.13	24.04	24.95	25.86	26.77	27.69	28.60	29.51
25	29.41		13.74	14.65	15.56	16.47	17.38	18.29	19.20	20.12	21.04	21.95	22.86	23.77	24.68	25.59	26.51	27.42	28.33
26	30.59		12.56	13.47	14.38	15.29	16.20	17.11	18.02	18.94	19.86	20.77	21.68	22.59	23.50	24.41	25.33	26.24	27.15
27	31.76		11.39	12.30	13.21	14.12	15.03	15.94	16.85	17.77	18.69	19.60	20.51	21.42	22.33	23.24	24.16	25.07	25.98
28	32.94		10.21	11.12	12.03	12.94	13.85	14.76	15.67	16.59	17.51	18.42	19.33	20.24	21.15	22.06	22.98	23.89	24.80
29	34.12		9.03	9.94	10.85	11.76	12.67	13.58	14.49	15.41	16.33	17.24	18.15	19.06	19.97	20.88	21.80	22.71	23.62
30	35.29		7.86	8.77	9.68	10.59	11.50	12.41	13.32	14.24	15.16	16.07	16.98	17.89	18.80	19.71	20.63	21.54	22.45
31	36.47		6.68	7.59	8.50	9.41	10.32	11.23	12.14	13.06	13.98	14.89	15.80	16.71	17.62	18.53	19.45	20.36	21.27
32	37.65		5.50	6.41	7.32	8.23	9.14	10.05	10.96	11.88	12.80	13.71	14.62	15.53	16.44	17.35	18.27	19.18	20.09
33	38.82		4.33	5.24	6.15	7.06	7.97	8.88	9.79	10.71	11.63	12.54	13.45	14.36	15.27	16.18	17.10	18.01	18.92
34	40.00		3.15	4.06	4.97	5.88	6.79	7.70	8.61	9.53	10.45	11.36	12.27	13.18	14.09	15.00	15.92	16.83	17.74
35	41.18		1.97	2.88	3.79	4.70	5.61	6.52	7.43	8.35	9.27	10.18	11.09	12.00	12.91	13.82	14.74	15.65	16.56
36	42.35		.80	1.71	2.62	3.53	4.44	5.35	6.26	7.18	8.10	9.01	9.92	10.83	11.74	12.65	13.57	14.48	15.39
37	43.53		----	.53	1.44	2.35	3.26	4.17	5.08	6.00	6.92	7.83	8.74	9.65	10.57	11.47	12.39	13.30	14.21
38	44.71		----	----	.26	1.17	2.08	2.99	3.90	4.82	5.74	6.65	7.56	8.47	9.38	10.29	11.21	12.12	13.03
39	45.88		----	----	----	----	.91	1.82	2.73	3.65	4.57	5.48	6.39	7.30	8.21	9.12	10.04	10.95	11.86
40	47.06		----	----	----	----	----	.64	1.55	2.47	3.39	4.30	5.21	6.12	7.03	7.94	8.86	9.77	10.68
41	48.23		----	----	----	----	----	----	.38	1.30	2.22	3.13	4.04	4.95	5.86	6.77	7.69	8.60	9.51
42	49.41		----	----	----	----	----	----	----	.12	1.04	1.95	2.86	3.77	4.68	5.59	6.51	7.42	8.33
43	50.59		----	----	----	----	----	----	----	----	----	.77	1.68	2.59	3.50	4.41	5.33	6.24	7.15
44	51.76		----	----	----	----	----	----	----	----	----	----	.51	1.42	2.33	3.24	4.16	5.07	5.98
45	52.94		----	----	----	----	----	----	----	----	----	----	----	.24	1.15	2.06	2.98	3.89	4.80
46	54.12		----	----	----	----	----	----	----	----	----	----	----	----	----	.88	1.80	2.71	3.62
47	55.29		----	----	----	----	----	----	----	----	----	----	----	----	----	----	.63	1.54	2.45
48	56.47		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	.36	1.27

Table No. 3

Cost of Cotton	Cotton Plus Waste	Price of Yarn / Price of Yarn Less 5% & 2% & 2% & .65 frt.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
			58.65	59.57	60.48	61.39	62.31	63.22	64.13	65.04	65.95	66.86	67.77	68.69	69.61	70 52	71.43	72.34	73.25
20	23.53		35.12	36.04	36.95	37.86	38.78	39.69	40.60	41.51	42.42	43.33	44.24	45.16	46.08	46.99	47.90	48.81	49.72
21	24.71		33.94	34.86	35.77	36.68	37.60	38.51	39.42	40.33	41.24	42.15	43.06	43.98	44.90	45.81	46.72	47.63	48.54
22	25.88		32.77	33.69	34.60	35.51	36.43	37.34	38.25	39.16	40.07	40.98	41.89	42.81	43.73	44.64	45.55	46.46	47.37
23	27.06		31.59	32.51	33.42	34.33	35.25	36.16	37.07	37.98	38.89	39.80	40.71	41.63	42.55	43.46	44.37	45.28	46.19
24	28.23		30.42	31.34	32.25	33.16	34.08	34.99	35.90	36.81	37.72	38.63	39.54	40.46	41.38	42.29	43.20	44.11	45.02
25	29.41		29.24	30.16	31.07	31.98	32.90	33.81	34.72	35.63	36.54	37.45	38.36	39.28	40.20	41.11	42.02	42.93	43.84
26	30.59		28.06	28.98	29.89	30.80	31.72	32.63	33.54	34.45	35.36	36.27	37.18	38.10	39.02	39.93	40.84	41.75	42.66
27	31.76		26.89	27.81	28.72	29.63	30.54	31.46	32.37	33.28	34.19	35.10	36.01	36.93	37.85	38.76	39.67	40.58	41.49
28	32.94		25.71	26.63	27.54	28.45	29.37	30.28	31.19	32.10	33.01	33.92	34.83	35.75	36.67	37.58	38.49	39.40	40.31
29	34.12		24.53	25.45	26.36	27.27	28.19	29.10	30.01	30.92	31.83	32.74	33.65	34.57	35.49	36.40	37.31	38.22	39.13
30	35.29		23.36	24.28	25.19	26.10	27.02	27.93	28.84	29.75	30.66	31.57	32.48	33.40	34.32	35.23	36.14	37.05	37.96
31	36.47		22.18	23.10	24.01	24.92	25.84	26.75	27.66	28.57	29.48	30.39	31.30	32.22	33.14	34.05	34.96	35.87	36.78
32	37.65		21.00	21.92	22.83	23.74	24.66	25.57	26.48	27.39	28.30	29.21	30.12	31.04	31.96	32.87	33.78	34.69	35.60
33	38.82		19.83	20.75	21.66	22.57	23.49	24.40	25.31	26.22	27.13	28.04	28.95	29.87	30.79	31.70	32.61	33.52	34.43
34	40.00		18.65	19.57	20.48	21.39	22.31	23.22	24.13	25.04	25.95	26.86	27.77	28.69	29.61	30.52	31.43	32.34	33.25
35	41.18		17.47	18.39	19.30	20.21	21.13	22.04	22.95	23.86	24.77	25.68	26.59	27.51	28.43	29.34	30.25	31.16	32.07
36	42.35		16.30	17.22	18.13	19.04	19.96	20.87	21.78	22.69	23.60	24.51	25.42	26.34	27.26	28.17	29.08	29.99	30.90
37	43.53		15.12	16.04	16.95	17.86	18.78	19.69	20.60	21.51	22.42	23.33	24.24	25.16	26.08	26.99	27.90	28.81	29.72
38	44.71		13.94	14.86	15.77	16.68	17.60	18.51	19.42	20.33	21.24	22.15	23.06	23.98	24.90	25.81	26.72	27.63	28.54
39	45.88		12.77	13.69	14.60	15.51	16.43	17.34	18.25	19.16	20.07	20.98	21.89	22.81	23.73	24.64	25.55	26.46	27.37
40	47.06		11.59	12.51	13.42	14.33	15.25	16.16	17.07	17.98	18.89	19.80	20.71	21.63	22.55	23.46	24.37	25.28	26.19
41	48.23		10.42	11.34	12.25	13.16	14.08	14.99	15.90	16.81	17.72	18.63	19.54	20.46	21.38	22.29	23.20	24.11	25.02
42	49.41		9.24	10.16	11.07	11.98	12.90	13.81	14.72	15.63	16.54	17.45	18.36	19.28	20.20	21.12	22.02	22.93	23.84
43	50.59		8.06	8.98	9.89	10.80	11.72	12.63	13.54	14.45	15.36	16.27	17.18	18.10	19.02	19.93	20.84	21.75	22.66
44	51.76		6.89	7.81	8.72	9.63	10.55	11.46	12.37	13.28	14.19	15.10	16.01	16.93	17.85	18.76	19.67	20.58	21.49
45	52.94		5.71	6.63	7.54	8.45	9.37	10.28	11.19	12.10	13.01	13.92	14.83	15.75	16.67	17.58	18.49	19.40	20.31
46	54.12		4.53	5.45	6.36	7.27	8.19	9.10	10.01	10.92	11.83	12.74	13.65	14.57	15.49	16.40	17.31	18.22	19.13
47	55.29		3.36	4.28	5.19	6.10	7.02	7.93	8.84	9.75	10.66	11.57	12.48	13.40	14.32	15.23	16.14	17.05	17.96
48	56.47		2.18	3.10	4.01	4.92	5.84	6.75	7.66	8.57	9.48	10.39	11.30	12.22	13.14	14.05	14.96	15.87	16.78
49	57.65		1.00	1.92	2.83	3.74	4.66	5.57	6.48	7.39	8.30	9.21	10.12	11.04	11.96	12.87	13.78	14.69	15.60
50	58.82		----	.75	1.66	2.57	3.49	4.40	5.31	6.22	7.13	8.04	8.95	9.87	10.79	11.70	12.61	13.52	14.43

Table No. 4

Cost of Cotton	Cotton Plus Waste	Price of Yarn / Price of Yarn Less 5% & 2% & 2% & .65 frt.	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
			74.16	75.07	75.99	76.90	77.82	78.73	79.64	80.55	81.46	82.38	83.29	84.20	85.11	86.03	86.94	87.85	88.77
23	27.06		47.10	48.01	48.93	49.84	50.76	51.67	52.58	53.49	54.40	55.32	56.23	57.14	58.05	58.97	59.88	60.79	61.71
24	28.23		45.93	46.84	47.76	48.67	49.59	50.50	51.41	52.32	53.23	54.15	55.06	55.97	56.88	57.80	58.71	59.62	60.54
25	29.41		44.75	45.66	46.58	47.49	48.41	49.32	50.23	51,14	52.05	52.97	53.88	54.79	55.70	56.62	57.53	58.44	59.36
26	30.59		43.57	44.48	45.40	46.31	47.23	48.14	49.05	49.96	50.87	51.79	52.70	53.61	54.52	55.44	56.35	57.26	58.18
27	31.76		42.40	43.31	44.23	45.14	46.06	46.97	47.88	48.79	49.70	50.62	51.53	52.44	53.35	54.27	55.18	56.09	57.01
28	32.94		41.22	42.13	43.05	43.96	44.88	45.79	46.70	47.61	48.52	49.44	50.35	51.26	52.17	53.09	54.00	54.91	55.83
29	34.12		40.04	40.95	41.87	42.78	43.70	44.61	45.52	46.43	47.34	48.26	49.17	50.08	50.99	51.91	52.82	53.73	54.65
30	35.29		38.87	39.78	40.70	41.61	42.53	43.44	44.35	45.26	46.17	47.09	48.00	48.91	49.82	50.74	51.65	52.56	53.48
31	36.47		37.69	38.60	39.52	40.43	41.35	42.26	43.17	44.08	44.99	45.91	46.82	47.73	48.64	49.56	50.47	51.38	52.30
32	37.65		36.51	37.42	38.34	39.25	40.17	41.08	41.99	42.90	43.81	44.73	45.64	46.55	47.46	48.38	49.29	50.20	51.12
33	38.82		35.34	36.25	37.17	38.08	39.00	39.91	40.82	41.73	42.64	43.56	44.47	45.38	46.29	47.21	48.12	49.03	49.95
34	40.00		34.16	35.07	35.99	36.90	37.82	38.73	39.64	40.55	41.46	42.38	43.29	44.20	45.11	46.03	46.94	47.85	48.77
35	41.18		32.99	33.90	34.81	35.72	36.64	37.55	38.46	39.37	40.28	41.20	42.11	43.02	43.93	44.85	45.76	46.67	47.59
36	42.35		31.81	32.72	33.64	34.55	35.47	36.38	37.29	38.20	39.11	40.03	40.94	41.85	42.76	43.68	44.59	45.50	46.42
37	43.53		30.63	31.54	32.46	33.37	34.29	35.20	36.11	37.02	37.93	38.85	39.76	40.67	41.58	42.50	43.41	44.32	45.24
38	44.71		29.45	30.36	31.28	32.19	33.11	34.02	34.93	35.84	36.75	37.67	38.58	39.49	40.40	41.32	42.23	43.14	44.06
39	45.88		28.28	29.19	30.11	31.02	31.94	32.85	33.76	34.67	35.58	36.50	37.41	38.32	39.23	40.15	41.06	41.97	42.89
40	47.06		27.10	28.01	28.93	29.84	30.76	31.67	32.58	33.49	34.40	35.32	36.23	37.14	38.05	38.97	39.88	40.79	41.71
41	48.23		25.93	26.84	27.76	28.67	29.59	30.50	31.41	32.32	33.23	34.15	35.06	35.97	36.88	37.80	38.71	39.62	40.54
42	49.41		24.75	25.66	26.58	27.49	28.40	29.32	30.23	31.14	32.05	32.97	33.88	34.79	35.70	36.62	37.53	38.44	39.36
43	50.59		23.57	24.48	25.40	26.31	27.23	28.14	29.05	29.96	30.87	31.79	32.70	33.61	34.52	35.44	36.35	37.26	38.18
44	51.76		22.40	23.31	24.23	25.14	26.06	26.97	27.88	28.79	29.70	30.62	31.53	32.44	33.35	34.27	35.18	36.09	37.01
45	52.94		21.22	22.13	23.05	23.96	24.88	25.79	26.70	27.61	28.52	29.44	30.35	31.26	32.17	33.09	34.00	34.91	35.83
46	54.12		20.04	20.95	21.87	22.78	23.70	24.61	25.52	26.43	27.34	28.26	29.17	30.08	30.99	31.91	32.82	33.73	34.65
47	55.29		18.87	19.78	20.70	21.61	22.53	23.44	24.35	25.26	26.17	27.09	28.00	28.91	29.82	30.74	31.65	32.56	33.48
48	56.47		17.69	18.60	19.52	20.43	21.35	22.26	23.17	24.08	24.99	25.91	26.82	27.73	28.64	29.56	30.47	31.38	32.30
49	57.65		16.51	17.42	18.34	19.25	20.17	21.08	21.99	22.90	23.81	24.73	25.64	26.55	27.46	28.38	29.29	30.20	31.12
50	58.82		15.34	16.25	17.17	18.08	19.00	19.91	20.82	21.73	22.64	23.56	24.47	25.38	26.29	27.21	28.12	29.03	29.95

A mixture of two kinds of coal will heat more rapidly than the poorer of the two.

On account of the low conductivity of coal, cooling by artificial ventilation is almost impossible unless the air reaches every part of the pile. Generally, the air travels through the stack in currents and exerts no cooling effects on parts a short distance away from its channels. Exclusion of air as much as possible, in order to stop oxidation, is more successful than attempts at ventilation to dissipate the heat generated.

Critical Temperature Testing.

Coals, under various physical and chemical conditions, have been tested to determine the temperature at which they generate heat so rapidly that, provided no deterrent is applied, they will eventually ignite. This temperature has been arbitrarily called the "critical temperature." Under similar conditions of heating and aerating, this critical temperature is an index of the liability of a coal to fire spontaneously.

The "critical temperature" method of testiny may be applied to the various coals of the country for grading their relative tendencies to fire spontaneously, and the Bureau of Mines expects to develop this method further and apply it in a survey of the coals of the United States.

The Week's Cotton Trade.

Cotton prices during the week ending February 29, with the exception of occasional sharp rallies, were considerably lower than at the close of the previous week, February 21 (February 22 holiday). Heavy liquidation, hedge and short selling were among the causes attributed to the decline. Reports from the dry goods centers, although of a slightly better tone, continued on the whole pessimistic.

March future contracts on the New York Cotton Exchange declined 117 points, closing at 28.88 cents.

No. 5 or middling spot cotton in ten designated markets declined a little over one cent per pound and closed at 29.25 cents per pound. The attention of the trade continues to be centered on the preparations for the new crop and reports indicate that more favorable weather prevailed during the week.

Exports for the week amounted to 85,165 bales, compared with 80,606 bales the previous week and 107,854 bales for the corresponding week last year.

Exports from August 1 to February 29 amounted to 4,308,893 bales, compared with 3,718,659 bales for the corresponding period last season. Figures include exports to Canada to January 31.

Certificated stock at New York on February 29 was 148,947 bales, and at New Orleans 19,276 bales. Total stocks, all kinds, at New York were 156,864 bales, and at New Orleans, 170,141 bales.

New York future contracts closed February 29: March 28.88 cents: May, 29.15; July, 28.48; October, 25.85; December, 25.45. New Orleans closed: March, 29.49; May, 29.00.

Greenville Mill Products of 1923 Valued at $38,880,603

Products of the 21 Greenville cotton mills during 1923 were valued at $38,880,603, as is shown by information compiled by the Chamber of Commerce and which was published in "Greenville" for distribution on the recent good will tour.

The capital involved in the Greenville mills totals $58,894,603. The number of yards of cloth made during 1923 was 321,808,711, or approximately three yards for every man, woman and child in the United States. In pounds of cloth made in Greenville mills totalled 69,401,835 pounds.

Four thousand and nine hundred different patterns of cloth were made in local mills during the year. A total of 10,315 employees took part in the operation of Greenville mills, receiving in wages therefor $7,543,-481.39.

Greenville mills now have a total of approximately 670,000 spindles. The total number of looms is approximately 20,000. The population of the various mill villages is estimated at 29,000 persons.

Dealing with the cloth made in local mills, "Greenville," the official journal of the Chamber of Commerce, says:

Greenville's twenty-one cotton mills manufacture, annually, enough cloth to wrap around the world at the equator five times, and still have enough left over to tie a bow knot with a strip one yard wide and end at Richmond and the other end at Atlanta.

Greenville is one of the few places in the country where one may follow King Cotton from the field, through the gin, the spinning mill, weaving mill, bleaching and finishing plant, thence to the cutting and sewing plant, to the packing room, where finished garments, ready for the retail trade, are put on trucks for delivery to the consumer, through the retail merchant. The largest complete cotton mill under one roof in the world is in Greenville.

Filling Preparation And its Effect on Spinning And Weaving

An address by George Foster, of the Universal Winding Company, at a meeting of the Fall River Overseers.

THE subject for your consideration this evening is the art of filling preparation and its effect on spinning and weaving processes.

This art is represented by two classes—one, that deals with silk and colored yarns that present such form and shape as to make the adoption of a preparatory process imperative; so much so that it need not be given nay further consideration.

The other, which applies to the winding and inspecting of grey filling yarns for convertible goods manufacture, where the adoption of the idea interjects into manufacturing an additional process contrary to precedent and practice methods of a century or more; and it is to consider this particular phase of the art that I seek your indulgence for the time allotted me this evening.

With the exception of those mills that now wind and prepare their filling yarns for weaving, it always has been, and now is, the common practice to spin grey filling for direct weaving consumption, with the result that imperfections and inequalities in spinning must either be weeded out at the loom, or be woven into the cloth. (In this connection, you will please bear in mind that in weaving you are dealing with a process where values and departmental costs are peak-high.)

Spinning is an art or practice that does not permit stress or strain on materials, for at this point you are dealing with roving that has no marked tensile strength; consequently, the amount of filling yarn contained on a filling bobbin is limited by these conditions.

Furthermore, since the days of hand looms we have been spinning filling to fit a hole in a block of wood; in other words, the inside dimensions of the shuttle have held spinning to lower gauge limits than would be practical if the art were given a chance for itself. I am aware that spinning limitations are controlled by other factors inherent in the art, but I think you will agree that the incentive to determine these limitations is entirely lacking when the shuttle arbitrarily predetermines the size limit.

In this connection, I take the liberty of questioning the advisability of fixing an arbitrary limit for an important process, where the operating units are twenty times greater than the units that effect the control.

For example, under common practice an overseer of spinning must keep approximately 40,000 spinning spindles at concert pitch in order to supply acceptable packages to 2,000 looms. Draft rolls, rings, travelers, bands, builder motions, etc., must function properly at the ratio of 20 to 1; otherwise, the peak process represented in the weaving must suffer. (I think you will agree that were the conditions reversed the task would be much easier.)

As a matter of fact, the limit set by the shuttle is seldom taken full advantage of. Spinning conditions at the above ratio will not permit it. The overseer of spinning must always play on the safe side, in order to prevent oversized or bunchy bobbins from being made.

This practice is responsible for direct loss in machine and hand time, or in other words, two important processes have been penalized through the restrictions set up by this direct practice. The proof of this contention is apparent in the method of handling warp yarns, for here we find a tendency to spin as large a package as spinning conditions will permit, in order to most effectually serve an intermediate spooling process, with the result that spinning and warping processes are not penalizing each other.

Outside of assumed cost, there seems to be no good reason why filling yarns should not receive the same preparatory attention that warp yarns receive, for it is an outstanding salient fact that the mental attitude of manufacturers towards the system of filling preparation shows that while they may question the advisability of adopting the idea, they never fail to express unqualified approval of its inherent value to prior and subsequent processes; in other words, there seems to be no question as to its desirability.

The intermediate process of filling preparation is one that winds filling or weft yarns in long, uninterrupted lengths for weaving, and it might well be termed a reduction process, its function being to transfer the contents of a large container, or the contents of two or more smaller containers, onto a tube or bobbin of suitable dimensions to serve a subsequent process.

If an intermediate winding process for filling is adopted it is then of great advantage to spin filling to as large dimensions as spinning conditions will permit, and there are no restricting specifications to handicap spinning conditions; neither will any deviations in spinning penalize the preparatory process.

In mills where ring frame filling yarns are spun for a preparatory instead of a weaving process, the practice is to use as large rings as conditions will permit, and where warp and filling yarns are too widely separated, it is the practice to spin warp and filling with the same size ring, using warp bobbins, filling build throughout, builder motions on spinning frames being set to insure full capacity bobbins.

Such practice materially reduces the number of weekly doffings in the spinning room, which is equal to a gain in spindle operating minutes. As far as the practice has been established, this gain seems to range between 2½ and 3 per cent; however, it is an easy matter to figure this improvement.

Spinning with larger rings also effects a marked reduction in the cost of doffing, which is a considerable item at the present time.

You will readily appreciate the marked flexibility of spinning and bobbin equipment, were a mill to spin its warp and filling yarns with the same size rings, for it is obvious that any gain in spinning efficiency could then be easily pro-rated into the element required by cloth construction.

For example, if the gain in spindle operating minutes effected a weekly increase of 600 pounds, then 52 per cent could be readily set up into warp and 48 per cent into filling, and the total poundage woven to gain additional profit.

With approximately double the amount of yarn on a filling bobbin, departmental transfer costs will be reduced.

Please do not imagine that suggestions to increase the size of spinning rings meet with no opposition, for opposition is always found when one attempts to inject a new idea contrary to precedent and practice methods.

Please understand that it is not my idea to definitely determine the size of rings to be used when spinning filling for a preparatory process, but rather to convey to you the idea, in order that you may become sufficiently interested to determine these facts for yourselves, and for the company you represent, suggesting that you always have in mind the use of a warp bobbin with a larger ring, for this will not only permit the desired improvement, but it will lessen yarn stress in the spinning practice.

I have often been told that if the size of the ring is increased the traveler will not stand the additional friction it would be subjected to. This I will admit is a little difficult for me to understand, in view of spinning practice in the yarn mills, spinning practice on warp frames in the cloth mills, and what is more to the point, spinning practice in mills where filling is now being wound for a preparatory process.

In my investigation I find that until recently there has been no marked improvement made in travelers since the year 1824; on the other hand, I find that recently Mr. Philip Wentworth, of the National Ring Traveler Company has perfected a new style of traveler that is 25 per cent harder at the horn than at the bow. This result is accomplished by a simple method of construction that allows spring temper to run to the bow before it reaches the horns.

I simply mention this in passing, as I do not like to think that so small a unit as a traveler should stand in the way of a progressive idea, for it is my observation that human factors supply all the opposition that is required.

While a considerable advantage and profit can be gained in spinning by the use of larger rings, a greater advantage will be found in the intermediate winding process which we will now consider.

The cost of winding is largely controlled by the size of supply furnished this process. A concrete example will best illustrate this point. A mill in maine, spinning 26/1s carded filling, 1 1/16" stock, first attempted to rewind the filling spun with 1⅜" rings, with the result that a winding operative with knot tyers handled thirty spindles and produced between 600 and 650 pounds per week of fifty-four hours.

This same mill was finally induced to spin this same count with 7⅞" rings (which is their warp size), and a winding girl is now taking care of forty spindles and producing over 900 pounds per week.

Dividing these two productions into a weekly wage of, say, $18.00, will give you some idea of how a large supply effects a reductino in the cost of filling preparation, and it follows, that if the cost of preparation is reduced to its lowest terms, then the chief objection to the idea or process is removed.

The winding machine to wind filling yarns onto bobbins for a shuttle is so constructed that each spindle is independent, and so accurate in its function that bobbins of uniform size can be made. In other words, it is possible to wind every bobbin to the maximum limit pre-determined by the shuttle; therefore, this intermediate winding process wipes out the penalizing factors in prior and subsequent processes previously referred to, each important process being allowed to function to its fullest advantage.

During a winding process imperfections made in the spinning are broken out, and at least double the usual amount of material is placed on the weaving bobbin, and it follows that the ideal combination would be to spin an uninterrupted length of filling material, equal to the improved length wound on the bobbin, for it will be plain to you that this would result in a simple transfer process at the winding machine, there being no knots in the filling except where imperfections occur, a winding spindle stopping only once for the change of supply and wound package.

When considering the effect of a preparatory process on weaving, it is well to bear in mind that we are dealing with a process where costs and values are peak-high, and commercial quality must be maintained. Filling breaks and filling changes are responsible for these imperfections in weaving, which manufacturers for a century or more have been anxious to overcome.

James Northrop recognized this when he invented the "automatic loom," as did J. R. Leeson when he conceived the idea of "grey filling preparation," the object and purpose of both improvements being to establish greater continuity of loom motion, in order to improve quality and save hand and machine time in the weaving process.

The improvement represented in the preparatory process is the only one which permits a prior inspection of material to remove imperfections made in spinning, and as the fundamental idea of the process is to double or triple the amount of filling usually placed in a shuttle, it follows that defects in cloth will be reduced in exact proportion to the improvement in yarn quality and the increase in yarn quantity; in other words, the elimination of filling breaks and the reduction in filling changes represent the sum total of improvement in this respect.

(Continued on Page 18)

Knit Goods

Manufacture of Knitted Undergarments

FORMERLY knitted underwear included any knitted garment worn next to the skin, such as undershirts, underdrawers and hose. Now knitted underwear includes a wide range of garments such as trousers and vests for men, union suits, ladies' vests and similar goods. Sweaters and various forms of knitted outer jackets are not included in this list. The class of knitted underwear articles under consideration is made from knitted web or from wrought fabric. If the underwear is cut from the finished web, by means of hand shears or a cloth cutting device, the separate parts are seamed together into the unit

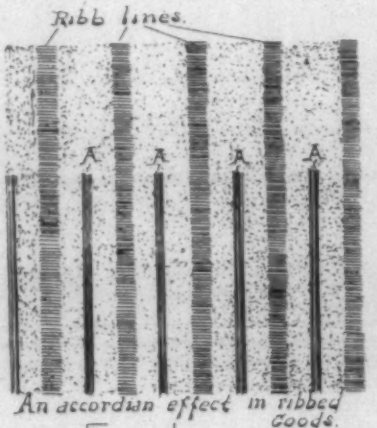

Fig 1

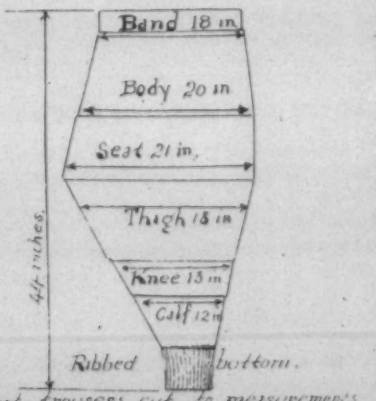

Fig 2

required for the formation of the garment. Electric-cutting apparatus is used to good advantage, as many pieces of the same shape can be cut simultaneously by placing a number of the fabrics in a pile.

In Figure 1 is shown a pattern for producing an accordian effect in ribbed material intended for use in making ribbed skirts.

The fabric is worked in a coarse gauge with 14 stitches alternating with four back stitches to form the rib lines. The body of the texture can be one with the rib lines another. The lines indicated A are made on the embroidery plan for ornamental purposes. These lines are all one height, but can be varied if desired. The embroidering material is silk, although yarns made from other material can be used. The object of the embroidered lines is to give novelty and brilliancy to the pattern, consequently a yarn is needed which has a lustrous finish.

Other combinations for skirts are cut from tubular fabric, while several styles of men's vests made with straight tubular bodies and short sleeves are produced. So important is this branch of the knit goods industry that some of the larger mills employ designers who are specially trained in the science of cutting material for knit underwear to the best advantage with the least waste of material. In goods in which costly yarns are used the matter of wastage in designing and cutting a garment is important. The designers study to get the proper proportions of the fabric with as little waste as possible either in the knitting or the cutting. This requires the use of knitting machines or various diameters to knit the bodies and sleeves of such garments as have straight, tubular forms. Both the plain and the rib machines are used, although in goods in which a very fine yarn is required for a fabric of fine gauge the spring bearded needle machines are preferred even with a loss of production. But for the manufacture of the average garment the coarse and medium gauged knitting machines with latch needles are used. If straight or fashioned selvedged fabrics are required the straight-bar machines are used.

Measurements of Knitted Trousers. A diagram of measurements of men's cut trousers, made from finished knitted web fabric, is thrown in Figure 2. It is stated by officials of knit goods sales organization that the world's war had much to do with the development of a demand for articles of wear of this description. With the establishment of the draft in 1918 nearly two million young men were furnished with woolen and cotton olive drab uniforms in which the trousers were cut baggy in the seat and gradually tightened to the bottom. Arrangements were underway by the Government to put another two million men in like uniforms.

Soon numerous textile mills and clothing manufacturers were turning out immense numbers of the uniforms and the loose fitting, comfortable but baggy breeches became numerous and popular. The young men in the olive drab uniforms were invited to the dances, the homes and to community entertainments while training in the camps. Soon the women began wearing suits of the same material and even at the present time the war-time khaki fabric is in fashion for outdoor sports. But instead of using a woven

fabric a knitted fabric is used in some of the garments similar to the one shown in the drawing, and which is made in two pieces, one of which is used in the diagram to indicate the measurements in inches. An average size is taken, to the measurements of which, inches or fractions of inches are added or substracted to make a larger or a smaller size. The length from the band to the lower edge of the ribbed bottom is 44 inches. The band is 18 inches, body 20 inches, seat 21 inches, thigh 18 inches, knee 13 inches and calf 12 inches. Similar garments are designed and cut on the same principle.

Lubrication of the Yarns in Knitting

Regardless of the character of the goods in process of manufacture, it is essential that the yarns be properly prepared for knitting by lubrication if their surfaces are of such nature as to require such action. While most yarns can be put through the knitting operation without a lubricating process, some will be so hard twisted, rough of surface of twitty that it will not be possible to get them through the latches of the needles without the application of oil. Sometimes this fact is not known until the yarn has already been tried. Then the attendant at the machine undertakes to apply a lubricant by having the yarn drag over a bunch of oliy waste in its passage to the needles from the bobbin.

This helps some. If the yarn is cotton, a piece of paraffin wax or hard tallow is placed where the yarn can glide through it and take on enough of the smoothing substance to make the yarn plastic and avoid the dropping of stitches and like imperfections which usually result from using a stiff, non-pliable thread.

For most of the animal fiber knitting yarns a lubricating preparation is used composed of five pounds of white curd soap boiled in water to which a quart of vegetable oil is added. After the mix is thoroughly made, it should be diluted by adding sufficient water so that the proportion will be six gallons of water to the soap and oil. Mineral oils are also useful for this purpose, but as they cannot be scoured out of the finished goods very readily, it is advisable to use vegetable oil. The application of the lubricating oils is made during the winding or warping of the yarns and if correctly done will impart to the yarn the necessary smoothness and pliability for knitting.

The process of removing the lubricating substance from the goods will be described in the articles on finishing knitted fabrics.

Textile Club Meets

Discussion of matters of interest and addresses by B. E. Geer, J. W. Arrington and others featured the regular monthly meeting of the Greenville Textile Club, held Friday night at the community building at the Union Bleachery.

In addition to numerous entertainment features the hospitality and genial fellowship of the men and officials of the Union Bleachery made the evening one to be long remembered by the members of this club. During the serving of a bounteous supper Mr. Van Wych, of Greer, entertained the guests by several selections on his piano-accordian. In addition to this, lovers of good music were delighted to hear the Poole quartet, composed of Mrs. Lula Poole, J. W. Poole, Perry Poole and J. E. Poole, with Henry Poole at the piano.

R. W. Arrington, superintendent of the bleachery, made a short talk welcoming the club as guests of his plant, and introduced L. P. Hollis, who extended an invitation from the Rotary Club of Greenville to the members of the Textile Club to be guests at a dinner on April 1, 1924. Mr. B. E. Geer, president of Judson Mill, was the speaker of the evening and made an impression upon his audience by his eloquent and sincere appeal to each individual and to the organization as a whole to help in bringing about that ideal for which this club and the Parker District stands.

J. W. Arrington, president of the Union Bleachery, made a timely and interesting talk which was highly enjoyed by all.

The unique plan of having girls from the different mills to serve refreshments was carried out by the following young ladies: Zelphia Pollard, Woodside; Ruby Gosnell, Judson; Lena Garland, Duncan; Edna Owens, Mills; Evelyn Hughes, Poé; Angie Loftis, Brandon; May Norris, Camperdown; Leo Petitt, Poinsett; Lucile Norris, Camperdown; Mrs. Snelson, Monaghan, and Mrs. W. P. Campbell, American Spinning Company.

At the business meeting, which was presided over by C. D. Dill, chairman, a plan to inaugurate an annual Textile Booster's trip was started by appointing a committee to be composed of one member from each mill to investigate the feasibility of such a tour.

Upon the invitation of J. H. Ruff, the club decided to hold its March meeting at Camperdown Mill.

Cotton Movement From August 1, 1923, to February 29, 1924.

	1924 Bales	1923 Bales
Port receipts	5,690,345	4,861,070
Port stocks	794,994	721,583
Interior receipts	6,627,068	6,527,669
Interior stocks	789,313	876,948
Into sight	9,742,011	9,827,461
Northern spinners' takings	1,407,143	1,762,667
Southern spinners' takings	2,987,194	3,359,182
World's visible supply of American cotton	2,785,208	2,733,781

Filling Preparation and Its Effect on Spinning and Weaving

(Continued from Page 15)

It is interesting to estimate the result of these improvements on a weaving process. First let us consider its effect on the wastage of filling materials.

When filling is spun on ring frames the wastage in weaving ranges from 2½ per cent, representing the minimum, to 4 per cent, plus, the maximum. While this might be said to represent the waste account in weaving, I believe another loss is oftentimes sustained, either through waste, or the expense of reclaiming bobbins that are spun oversize, or bobbins with bunches that prevent them being used in the shuttle. As a matter of fact, we are aware that most weaving mills operate from one to four winding machines for reclaiming poorly spun bobbins, and to no particular advantage except the salvaging of materials.

With an intermediate winding process these losses are practically eliminated, there being no discriminating factors to reject badly spun bobbins. In automatic looms, where feeler motions are employed, the saving in weaving waste is approximately 60 per cent, and it naturally follows in this particular case, that the expense of reclaiming feeler waste is lessened in exact proportion.

So marked a saving in waste, if figured correctly over a yearly period, amounts to a considerable dollars-and-cents item, for the pounds represented by this loss should be available for cloth construction, which is the medium on which profits are enjoyed.

Speaking of profits or losses, please understand that propositions of this nature should not be figured under abnormal or subnormal conditions.

Let us next consider the effect of a preparatory process to improve plain loom efficiency.

In this connection, available information shows us that when yarns are inspected and prepared in long lengths for weaving plain goods, loom efficiency is increased 5 per cent, while the improved efficiency on plain looms weaving fancy goods ranges from 10 to 12½ per cent.

This latter improvement may imprses you as being extremely high, so please bear in mind that a rewound bobbin of fine filling will run thirty to forty minutes without a break; also bear in mind that when weaving fancy goods considerable time is lost in matching picks and patterns when interferences due to filling breaks and filling changes occur.

Any increase in loom efficiency is a very important factor for consideration, not only for its direct effect on overhead, but because of its bearing on the direct labor cost of weaving, and the opportunity it presents to enjoy additional margins of profit.

A close study of conditions in mills operating the preparatory system indicates that a substantial reduction in filling breaks and filling changes permits the readjustment of loom jobs to effect savings in direct labor cost of weaving.

Where plain looms weaving plain goods are being operated, loom jobs are usually increased 50 per cent, although in some instances a greater increase has been considered feasible.

Where looms weaving fancy goods are being operated, loom jobs are seldom increased over 25 per cent, and in some instances, not at all, for it is apparent that in this class, where values are usually high, the substantial increase in loom efficiency is comparable to any change. In direct connection, you might bear in mind that when applying percentages on high values, correspondingly high savings result.

When piece prices are adjusted to fit the changed conditions, the three following factors are usually taken into consideration—first, the difference in size of loom job; second, the improvement in loom efficiency; third, the extent of labor's participation in the improvement, and it is reasonable to assume that an equitable revision on this basis has been found satisfactory and profitable to all concerned.

The effect of a preparatory process on quality is too well understood to require detailed analysis; sufficient to say, that a method which serves a peak process with long, uninterrupted lengths of inspected material is bound to mitigate the evils coincident to constant interruption, and it follows that if filling breaks and filling changes are responsible for difficulties that lower values, then a reduction in these interferences must preserve values for ideal profit. Moreover, improvements in this respect must lessen cost of inspection and classification.

I have often been reminded that on staple prints improvement in quality is not of sufficient importance to recommend filling preparation. It is not my prerogative to question this point, except that I have always been under the impression that from a competitive commercial standpoint quality is always desirable in any line of manufacture. Furthermore, if there is such a thing as seconds in the staple line referred to, then there must be a discriminating point where values change.

Up to the present time more plain than automatic looms have been served with prepared filling. The reason for this is obvious when one considers that by degree a process which doubles or triples the amount of yarn on a filling bobbin in order to save hand and machine time in weaving, is not unlike the idea which automatically changes the bobbin to effect like results; consequently, manufacturers are naturally inclined to view the adoption of both methods as superfluous, the increment of cost again becoming a prime factor temporarily to check a just consideration of values.

However, at the present time we are confronted with the fact that many automatic looms are being served with long lengths of inspected filling, and this acceptance seems to indicate that savings made in spinning, weaving, and cloth classification have at least absorbed the

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The Dyeing of Fabrics

By W. F. Van Riper, Headquarters Staff Du Pont de Nemours & Co., at the Better Fabrics Dinner at Providence, R. I.

You are promised a few thoughts on the subject of "Fast Colors in Fabrics," and an interesting topic it is. It is particularly so when a convention of laundry owners asks a dyestuff manufacturer to not only be present but also to speak, and on such a subject. For friends, here we have an association of men whose business in life it is to wash everything out of both plain and colored cloth, asking me to tell you that there is such a thing as a dyestuff sufficiently fast to washing as to resist their best effort.

Seriously though, that is the happiest phase, to dyestuff manufacturers, at least, of the whole situation, for of all people in the world who might be skeptical, we have instead an absolute conviction on the part of laundry owners that fast colors are obtainable, that fast colors are being used, and best of all, that these same colors are labeled "Made in the U. S. A."

And so I might prove by some such inductive argument, by my mere presence here, that American dyes are fast, and take my seat. It's true I could, but you are not quite so fortunate this time. Bear with me yet a little longer.

My reason for continuing is that while your laundry managers may appreciate the situation, it is quite possible some who hear me are still a bit doubtful. It is to these latter, in particular, that my remarks from now on will be addressed. The rest you please "stand by" for a few moments.

Now before we enter heavily into any discussion it would seem time well spent to reach an understanding as to just what would constitute a fast dye. The other evening it was my pleasure to be showing to a branch of the American Chemical Society in Brooklyn a motion picture of our Deepwater Point dyestuff plant. At the end of the film we had the customary question hour. Then it was that one well-known scientist gave us all a good laugh by asking this question, "Mr. Van Riper, what will be the advantage to humanity if you dyestuff manufacturers soon produce colors that last longer than the materials on which they are dyed?"

After we had established order again I calmly proceeded to give a few of those there a mental jolt by stating, that strange though it might seem, American dyestuff producers had already arrived at such a high plane of development. For some of the colors now being produced are brighfest as the fabrics fall to pieces. Not to be outdone this doctor of science replied "I am greatly obliged for the thought, hereafter I shall suggest to a few of my pet chemical students that they give some thought to 'dyestuff recovery.'"

Now of course when anyone speaks of recovering anything one's mind immediately concludes that the article in question has some value. And true it is, the colors having such a high degree of fastness cost considerably more than their more fugitive brothers. I think it might be truthfully said that but for the additional, and prohibitive cost in some cases, every colored article we use could be dyed with colors of such fastness as to resist practically every attempt we could make to strip them. And do not forget this important point: the dyestuffs used could all be of American production, for contrary to the story told in imported propaganda the American dyestuff producer "has arrived."

Do you know, I always enjoy looking upon the several hundred well-known dyestuffs as so many humans with their crystallized personalities. Some of us are easily led into temptation and always as easily fall, while others of us either through heredity or subsequence "after treatment" in the form of environment are possessed of sufficient resistance to withstand the fiery darts of "the devil and all his band" as our parsons put it.

So it is with the twelve hundred odd commercially produced dyestuffs. Some of them lead a short but brilliant career; the basic colors. Others continue until middle age to lead useful although drab existences; the acid and direct colors. And still others, though a small minority, lead an extremely steadfast life for their "three score years and ten" and very often by reason of strength it is "four score," with a strong possibility, if our pedagogic friend carries through his threat, of a resurrection unto further life. In these last we have the vat and alizarine colors.

So, if you were a dyer in any mill you could think of yourself as a theatrical producer with over a thousand personalities to pick from, and I am sure you would do better picking than some dyers do who are controlled more by the money they can save their mills than by a desire to produce a satisfactory article.

I do not want you to get the impression that I advocate the use of these practically permanent colors on every kind of material. Such a line of argument would require us to wear the thickest and warmest of undergarments the year through because in so doing we would be certain of receiving the greatest degree of protection.

In a similar manner it would be a great waste of effort and money to insist that the pink dye used in the tinting of delicate chemises be absolutely fast to the action of sunlight, to whose rays it is but rarely exposed. Or again to insist that the colors used in the dyeing of drapery material resistant to the action of perspiration.

So we are forced to acknowledge that there is a happy sufficiency of fastness properties which any color has to possess in order to satisfactorily meet the demands made upon it.

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Visiting the Textile Machinery Shops

(Continued from last week)

By David Clark, Editor

Woonsocket Machine & Press Co., Inc.

Arriving at the Woonsocket Machine & Press Co., Inc., Mr. Windle assigned Fay Martin to pilot me and no better man could have been found, because he is a student of textile machinery manufacture and is much interested in improved processes.

We first paid a visit to office of Mr. John Montgomery, the plant manager. While there Mr. Montgomery showed me some very long and silky fibres known as ray. It seems that there is a plant in China that produces these fibres in large volume but the expense of de-gumming has been too great.

A German inventor claims to have discovered a cheap process and it is claimed that yarns can be produced of ray fibre at less than the cost of raw cotton. A company known as the Raybot Company has been formed for the purpose of handling ray fibre.

The Woonsocket Machine & Press Co. build opening machinery, lappers, card, roving machinery and drawing frames. They bought the pattern and machine tools of the Potter & Johnson Machine Co., but have entirely re-designed the machines.

Entering the shops my attention was first attracted by a machine for finishing the sides of a drawing frame. The part is laid on a planer bed but instead of being fastened down is held in place by electric magnets. After being ground, the current is cut off and the piece is free to be lifted off.

I found that instead of casting their card cylinders in one piece, they cast them in two parts, turn a male and female joint where they are to be joined together and then are put together by heavy bolts. These operations are, of course, before the cylinders are turned. Their card arches are placed in a revolving chuck and cut to size with milling machines.

Their foundry was well equipped and it would be useless to try to describe the automatic machines for the manufacture of the various parts.

In boring bolsters they are fastened in jigs that fit in a groove and pass under six drills. When one bolster is finished the jig is removed, a bolster blank fitted in and it starts again at the other end.

When the roving spindles are about completed they are passed between two grindstones revolving at a very high rate and are turned to exact size and polished.

A feature of the Woonsocket Machine & Press Co. work is that they anneal many of their castings in order to give them greater resisting power.

There were a number of lappers and Crichton openers on the erection floor. A new feature of the lappers are evener cones with the bottom cone so arranged that its weight keeps the belt tight. They said that test showed a great improvement in lap evenness though the installation of that system. Their Crichton opener is driven with a spiral gear.

They are also building a zig-zag cleaning trunk.

They have adopted two chain drives to replace the horse head on speeders and in order to insure that there will be no stretch in the chains they run them for some time at high speed on a testing frame. They also run their top flat chains on a testing frame to insure their free movement and that there will be no stretch.

In a large room were skeleton cards with arches like regular cards and on these they were grinding the top flats under exactly the same conditions as they are ground on a card in the mill.

At the experimental room we were joined by the chief engineer, Geo. F. Albright, and he explained the special features of their cards, drawing frames and speeders. Mr. Albright is a man of unusual intelligence and his ideas are being developed in the new features. He also is developing a new model roving frame.

Mr. Albright is a believer in the individual drive and is adapting it to the Woonsocket Machine & Press Co. machines.

The general impression I gained from my visit to this shop is that they have a wide awake organization that is continually striving to improve their machines. I was also impressed with their ideas relative to improving the appearance of each machine and making it easy to clean and to keep clean.

About 3 o'clock Mr. Windle and Fay Martin drove me to the plant of the Shambow Shuttle Company, which is also in Woonsocket.

Shambow Shuttle Co.

It had been several years since I had been to the Shambow Shuttle

Company and since my last visit they had moved into a modern four-story building with 36,000 square feet of floor space. The building was designed by Lockwood, Greene & Co., and everything arranged with a view of efficiency.

They produced and sold 400,000 shuttles in 1923 and claim to be the largest manufacturer of shuttles under one roof, that is, they not only manufacture the shuttles but all of the parts for same.

John C. Shambow, the president and treasurer of the firm and the grandson of the founder of the business, was in the South looking after their new plant at Greenville, S. C., which will manufacture spools and bobbins. He will make his home at Greenville for awhile at least.

Harry H. Ullman, the vice-president and general manager, personally showed me most of the plant. Mr. Ullman came to them in 1921 from the Alexander Hamilton Institute and has played a large part in the recent developments of the company. He is a frequent visitor to the South. I also met the assistant treasurer, M. J. Offers.

In going through the plant we first entered the basement in which were stored 1,000,000 shuttle blocks and were shown the steam operated and automatically controlled dry kilns.

I was also shown how the shuttle blocks are carefully graded and defective ones eliminated before being handled by the machines.

On the same floor are drop forging machines which stamp and weld the iron parts of the shuttles including the tips.

When the shuttle blocks come up stairs one man saws two sides and another saws the other two sides and then they are cut to length and rings driven in the ends before the tips are forced in.

After that they pass from machine to machine for different cuts to be made, the tips always serving as register points.

As they pass along some are damaged and discarded because in cutting knots have been uncovered.

In order to make an order of shuttles they start with 20 per cent more shuttle blocks than the number of shuttles desired.

I realized in watching their work that there was a large expense in waste if perfect shuttles are required as in the Shambow Shuttle Company.

They have a large brass foundry which I did not visit but it was interesting to watch them work the automatic loom shuttle eyes out of the brass castings.

At one point Mr. Ullman turned me over to J. A. Darsey, the superintendent of the factory. Mr. Darsey at first impressed me as rather young for such a job but as I went through with him, I realized that he was competent to handle the position.

A feature that interested me was their fibre covered shuttles. They make a shuttle slightly smaller than needed and cover it with fibre board from tip to tip. Such shuttles are used by silk mills and by silk and cotton mills such as the Judson and Dunean. They cost more than plain shuttles but last longer and do less damage to the warp.

That some cotton mills are adopting them was evidenced by the fact that they were working on a large number for the Erlanger Mills.

Mr. Darsey told me that in the manufacture of wood shuttles they manufacture about 85 per cent dogwood and 15 per cent persimmon.

A very interesting feature of the Shambow Shuttle Company was the last inspection. They found a man who had been overseer of weaving in a silk mill, a worsted mill and a cotton mill.

Every shuttle goes through his hands before it leaves the factory. His work is to very carefully examine every shuttle just as if he was overseer at a mill and to pass none that he would not be glad to receive if he was in a mill.

Returning to the office I met C. H. Morris, the works manager, and A. W. Angell, who formerly sold their shuttles in the South.

Mr. Ullman drove me to the station in his car and I was back in Boston at 6 p. m.

(Continued next week)

Some Improvement in Goods Market

THE market situation is analyzed this week by the Hunter Manufacturing and Commission Company as follows:

"When writing a week ago, we did not mean to imply that we expected an immediate and decided change in the character of the market, but rather that we were fast reaching, if we had not already reached, the point, from which a gradual change in the temper of the buyer and his attitude towards the market might be expected. It seems to us that the past week has fully borne out these expectations. There have been no material price changes, but there has been a very decided increase in the volume of business on print cloths and sheetings. All constructions have not, of course, been at an even balance, for on many constructions prices have already far more than discounted such decline in cotton as there has been, while in other cases the decline has been less severe. In the latter class, some slightly lower prices have appeared during the week in the former class, previous low prices have been maintained with active buying, and advances have been secured during periods of steadiness of the cotton market. The results of the week have well satisfied us in our previous conclusion.

"For the first time good inquiry has developed for many of the sheetings for May-June delivery—in some cases even for June-July, at spot prices. Aware of the headway which curtailment is making, the mills have been less favorably disposed to late contracts on the theory that any possible further decline in cotton because of curtailment would be more than offset by the lightening of mill stocks, and this argument has some appeal to us, believing as we do that present prices have quite discounted the

(Continued on Page 33)

Yarn Mills Show Cost

E. S. Reid & Co., of Charlotte, recently sent a questionnaire to a number of yarn mills, asking for their costs for making knitting yarns. A number of the replies are listed below. The figures are especially interesting because of the present low prices prevailing for yarns:

Mill No. 1—Basis 14s Hosiery Cones.

Cotton	34.00
Waste	4.42
Freight	1.00
Commissions (5%)	2.50
Cash discount	1.00
Cone allowance	1.00
Labor	4.00
Repairs	1.29
Insurance	.12
Power	1.29
Depreciation	2.03
Overhead, etc.	2.50
Total	55.15

Mill No. 2—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	5.00
Freight	.98
Commissions (5%)	2.50
Cash discount	.95
Cone allowance	.93
Labor	3.75
Repairs	.25
Supplies	.75
Insurance	.15
Power	1.00
Depreciation	.25
Overhead, etc.	1.25
Total	51.76

Mill No. 3—Basis 8s Filling Twist.

Cotton	34.00
Waste	6.00
Freight	.75
Commissions (5%)	2.40
Discounts	1.37
Labor	4.00
Repairs, Insurance and Power	2.00
Total	50.52

Mill No. 4—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	6.00
Freight	1.00
Commissions (5%)	2.40
Cash discount	.912
Cone allowance	.894
Labor	3.50
Repairs	.50
Insurance	.25
Power	1.25
Depreciation	.50
Overhead, etc.	1.50
Totals	52.70

Mill No. 5—Basis 26s Hosiery Cones.

Cotton	34.00
Waste	6.00
Water, Oil and Insurance	.4363
Labor and Expenses	7.6224
Fuel (Coal)	.3473
Fuel (Electric)	.8515
Supplies	.8225
Freight	1.1108
Taxes	.60
Repairs	.4363
Cone allowance	1.0600
Commissions (5%)	2.5970
Cash discount	.9869
Total	56.8710

Mill No. 6—Basis 10s Hosiery Cones.

Cotton	34.00
Cost of Manufacture	11.00
Total	.45

Mill No. 7—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	4.50
Freight	.85
Labor	4.00
Repairs and Supplies	1.50
Insurance	.15
Power	.85
Depreciation	1.00
Overhead, etc.	.50
Discounts and Commissions	3.50
Total	50.00

Mill No. 8—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	6.00
Freight, including Cases	.90
Selling Cost, 2, 2 and 5%	4.12
Labor	2.75
All Other Charges	3.50
Total	51.27

Mill No. 9—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	6.00
Commissions	1.00
Manufacturing and Freight	7.50
Total	48.50

Mill No. 10—Basis 10s Hosiery Cones.

Cotton	34.00
Waste	6.00
Freight	.84
Commissions (based on sale at 47c, 5%)	2.35
Labor	4.00
Findings	1.00
Total	49.53

Mill No. 11—Basis 22s Hosiery Cones.

Cotton	34.00
Waste	3.84
Freight	.85
Commissions (5%)	2.60
Cash discount	1.04
Cone allowance	1.02
Labor	6.40
Repairs	.52
Insurance	.41
Power	1.23
Depreciation	1.00
Overhead, etc.	1.15
Total	54.60

Mill No. 12—Basis 12s Hosiery Cones.

Cotton	34.00
Waste	4.00
Freight	.75
Commissions (5%)	2.50
Cash discount	1.00
Cone allowance	1.00
Labor	2.55
Repairs, Insurance, Power, Depreciation, Overhead, etc.	3.5745
Total	49.3745

Mill No. 13—Basis 28/2 Yarn.

Cotton	34.00
Waste	6.00
Freight	1.00
Commissions and Discounts	5.00
Labor	7.00
Repairs	.75
Insurance	.25
Power	1.50
Depreciation	3.00
Overhead, etc.	1.50
Total	60.00

Mill No. 14—Basis 20s Hosiery Cones.

Cotton	34.00
Waste	3.40
Freight	.80
Labor	4.35
Insurance	.15
Power	.75
Depreciation	1.50
Overhead, including Salaries, Taxes, etc.	2.50
Repairs	2.75
Commissions (2%)	1.00
Cone allowance	1.00
Cone allowance	1.00
Total	53.20

What the World's Cotton Goods Markets Are Doing

United States.

According to preliminary figures assembled by the Department of Commerce, 37,740,454 cotton spinning spindles were in place in the United States on January 31, 1924, of which 33,339,806 were operated at some time during the month, compared with 34,044,870 for December, 34,101,452 for November, 34,378,662 for October, 33,929,885 for September, 33,708,667 for August, 34,237,887 for July, 34,843,421 for June, 1923, and 35,236,928 for January, 1923.

Mexico.

The textile industry continues to suffer difficulties from the shortage of raw material on hand, and although no important closings have been reported, rumored suspensions or partial shutdowns have resulted in threats by labor to take over the cotton mills if they close down. It is anticipated, however, that further trouble will be avoided, especially in view of the large improvement in the means of communication and distribution. Present indications point to an unusually large cotton crop in the Laguna district, which was formerly the most important cotton producing area in the Republic.—Cable from Commercial Attache Alexander V. Dye, Mexico City, February 23.

Brazil.

The demand for textiles during the month was slow for both imported and domestic goods. It is reported that local manufacturers are working on old orders, as new orders are not coming in satisfactorily. England led in shipments received, with Germany and Italy close seconds.—Cable from Trade Commissioner W. E. Embry, Rio de aneiro, February 23.

Peru.

The demand for textiles is light and the market appears to be overstocked in all classes.—Cable from W. N. Pearce, Secretary to Commercial Attache, Lima, February 23.

England.

The movement in cotton prices is naturally depressing to the market and has resulted in an atmosphere of greater apathy, and a lack of confidence, particularly in regard to coarser goods—yarns and cloth. As usual, finer goods are still going through and the world's luxury buyers continue to make their demands for Lancashire cloths. Calcutta has for the time being lost the position of prime importance in the Indian markets, Bombay and Madras coming to the fore, although neither of these markets have been really important. Chinese purchases are off, as is quite normal for this time of the year.—Trade Commissioner Hugh D. Butler, London, February 9.

Netherlands.

There are no recent changes visible in the prospects of the textile lockout, both employers and operatives obstinately refusing concessions. Strike funds of union organizations runnin low and many strikers are thus dependent entirely on municipal doles. The contest hinges on eight-hour principle and it is feared that a long continued strike will result in exclusion of Dutch manufacturers from even the few markets so far retained. Factory fabric stocks are now practically exhausted and domestic wholesale and retail supplies are abnormally low. Being largely produced from raw material purchased at higher price levels, these stocks are not generally liquidated with normal profit.—Cable Commercial Attache Cross, February 19.

Japan.

Warehoused stocks of raw cotton have increased during January. There has also been a decline in the production of cotton yarn. This decline in connection with the slump in exports and the increase in warehoused stocks indicates a falling off in the prosperous condition which has characterized the industry since the earthquake. The New Year holidays, of course, account for a considerable proportion of the declining production and also undoubtedly affected export and domestic consumption. — Cable from Acting Commercial Attache E. G. Babbitt, Tokio, February 18.

Straits Settlements.

There is a very large business done throughout Malaya in cotton piece goods of all descriptions. English manufacturers at present hold a partial monopoly in this trade, but are slowly giving way to the ever increasing demand for American products.—Vice Consul Richard Ford, Penang, January 15.

British India.

The cotton goods market is quiet but the outlook is encouraging. Stocks are lighter. Imports of piece goods in January were almost twice as heavy as in December, 1923. January grey goods imports were 90,501,000 square yards as against 49,857,000 square yards in December; January white goods imports were 40,753,000 square yards and 20,756,000 in December; colored goods imports in January were 30,095,000 square yards and 18,000,000 square yards in December. Great Britain furnished about 80-85 per cent of all imports. Japan contributed 17 per cent of the grey goods and 12 per cent of the colored cloths.—Cable from Consul General Weddell, Calcutta, February 26.

Yarn Spinners' Association Reorganized

AT a meeting in Charlotte on Tuesday of cotton yarn spinners from all sections of the South, the complete and thorough reorganization of the Southern Consolidated Yarn Spinners' Association was effected, officers elected and a governing board chosen, with Benjamin B. Gossett, of Charlotte, president. The name of the association was changed to the Southern Yarn Spinners' Association. Coupled with this action, the association went on record as unanimously condemning the speculative sales of yarn and provided for the drafting of suitable selling rules which each member will be asked to subscribe to and observe, all spinners being urged to sell his product only through legitimate commission houses or direct to the trade so that each transaction will be a bona fide sale representing something of real trade value. It was also voted to move the headquarters of the association to Charlotte and that a full-time secretary be employed. Action was taken to strengthen the organization, the clearly expressed sentiment being highly in favor of a strictly business body that will deal aggressively and constructively with the many perplexing problems now confronting the yarn industry in the South.

The meeting was called to order at 11 o'clock at the Selwyn Hotel with spinners present from all sections of the Carolinas, Georgia and other Southern States, the attendance being both large and representative. After a thorough discussion of present-day market conditions and a consideration of abuses in the yarn trade, it was unanimously voted that a reorganization of the association be effected. This was achieved with the selection of the following directors: B. S. Gossett, Charlotte; Robert Chapman, Cheraw, S. C.; W. B. Moore, York; J. A. Long, Roxboro; Clifford J. Swift, Columbus, Ga.; C. E. Hutchison, Mount Holly; J. E. Erwin, Morganton; R. C. McEachern, St. Paul; Arthur M. Dixon, Gastonia; A. M. Fairley, Laurinburg; M. L. Cannon, Charlotte; K. S. Tanner, Rutherfordton; J. E. Parker, McColl, S. C., and Scott Roberts, Anniston, Ala., and the election of Mr. Gossett, president and treasurer of the Riverside Manufacturing Company, Anderson, S. C., and of the Chadwick-Hoskins Company, Charlotte, as president.

Mr. Gossett in accepting the office outlined briefly but convincingly the policies he considered should characterize the association, which statement was given unanimous and hearty endorsement. This centered largely about the necessity for the elimination of the yarn speculator and the drafting of suitable selling rules. It is understood that a committee will begin work at once on these rules which will deal with the matter of variation in weight, variation in number, tare, etc., and which will provide for arbitration of all disputes. When drafted and approved, each and every member of the association will be asked to pledge himself to their observance. It was freely remarked following the meeting that the gathering was the largest and most representative of recent years.

More Floor Space for Textile Hall

Greenville, S. C.—An important change in policy has been announced by W. G. Sirrine, president of Textile Hall Corporation, which conducts the bi-annual Southern Textile Exposition at Greenville, S. C. The change contemplates devoting much more space than formerly to exhibits of machinery, and providing a separate floor of Textile Hall for accessory exhibits, or if this proves impractical, building na emergency building adjoining the present hall for the purpose of housing exhibits of accessories and supplies.

Mr. Sirrine made the announcement of the change at a meeting between himself and a group of accessory and supply dealers and representatives. He declared that the corporation had applications for 10,000 square feet more space than it had available, and that the manufacturers of large machinery, such as looms and spinning frames, had indicated that unless they could secure a greater allotment of space than had been made heretofore, they would not come into the 1924 show, which is to be held in October. The space in Textile Hall being limited, Mr. Sirrine told his audience that the corporation was faced with the problem of adopting a new policy, either building a new building for the accessory exhibits, or of having a special accessory and supply exhibition in the spring of 1925. This latter course was voted against by the supply men.

Mr. Sirrine then outlined the tentative plans for erecting a wooden building adjoining the present hall, to be 100 by 150 or 200 feet, and connected with the main hall by covered galleries. DuPont Guerry, of the Huntington & Guerry Co., electrical contractors of Greenville, brought forward the suggestion that a "deck" of extra floor be erected in the second floor of Textile Hall, to stretch from balcony to balcony on the sides, thus making an additional floor which could be given over to the accessory exhibits. This suggestion won instant approbation from all present, and Mr. Sirrine declared that if the project met with the approval of J. E. Sirrine & Co., architects and engineers of the building, it would be done. A motion to this effect was offered by D. H. Wallace, and was unanimously adopted. Mr. Sirrine declared that as soon as the architect could pass on the proposal, he would write each one of the exhibitors just what was to be done.

Manufacture of Artificial Silk

THE following is an address by P. E. King, before the Textile Institute of Leicester, Eng.:

From a commercial standpoint, artificial silks date only from the last twenty-five years. There are, at the present time, four distinct types of artificial silk; that is, distinct in that they are manufactured by different methods. In the order of their introduction on the market, they are:

1. Chardonnet or nitro-silk, also called Tubize silk.
2. Suprammonium.
3. Viscose.
4. Acetate silk.

Chardonnet silk is manufactured from cotton, usually cotton linters. This, after purification, is converted, by the action of sulphuric and nitric acids, into a nitro-cellulose, the process being similar to that of the manufacture of gun cotton, except that the degree of nitration is less. After a thorough washing, the wet nitro-cotton is dissolved in a mixture of alcohol and ether to form a viscous solution. This solution after filtration forms the spinning liquid.

The next operation, that of spinning, consists of forcing the viscous fluid through fine openings in glass tubes. On emerging, the thin streams are coagulated by evaporation of the solvents, and filaments of silk are produced. A number of these are caught up to form a thread and are wound on to a running bobbin. The number taken depends on the size of the thread, and for the size of 150 denier would be 18.

The spinning apparatus is enclosed in a cover, and a current of warm damp air passing through carries the vapors of alcohol and ether away to be condensed in a suitable manner. By distillation, a great part of the mixed solvents is recovered. The recovery of expensive solvents as completely as possible is naturally very desirable. Although at this stage the threads when dry are lustrous, they are too inflammable to be of use, and the silks also keeps badly and dyes with difficulty. It is still chemically in the form of nitro-cellulose, and in the next process, called de-nitration, the nitro groups are removed and regenerated cellulose or cotton results. The removal is accomplished by a solution of ammonium sulphide, and the threads after the treatment are still lustrous but somewhat weaker.

After bleaching the commercial thread is obtained. It will be observed that the ultimate or final thread consists of regenerated cellulose or cotton, but in a different physical form. This point is important when the dyeing of artificial silks is undertaken. The processes

PURIFIED COTTON
Sulphuric and Nitric Acids
NITRO-CELLULOSE
Dissolved in Alcohol and Ether
SPINNING SOLUTION
Filaments coagulated
NITRATED THREAD
Removal of Nitro Groups
UNBLEACHED THREAD
Bleaching
COMMERCIAL THREAD

Fig. 1. Production of Chardonnet or Nitro-Silk

in the manufacture of Chardonnet silk are represented diagrammatically at Fig. 1.

Cuprammonium silk, also termed cuprate or Pauly, was produced, in the first place, largely by the Germans at Elberfeld. Cotton has been and still is the chief raw material for this silk, but I believe wood pulp can also be employed. Whichever raw material is used, its subsequent treatment is entirely different from that for Chardonnet silk. After purification, then preferably mercerization, the cotton is stirred up with a solution of copper in ammonia until solution is complete.

The solution of the copper is performed by passing air through a solution of ammonia, kept at a low temperature and containing copper turnings. This solution is dark blue in color, and after solution of the cellulose a blue viscous solution is obtained which, when filtered, forms the spinning fluid. This is forced through glass jets into a coagulating or setting bath. The coagulating bath may differ in composition but most usually is one of strong caustic soda, also containing glucose.

The fine filaments are drawn off under tension and caught up to form threads which are wound on to bobbins. Further purification consists in the removal of the copper and in bleaching, when the commercial thread is obtained. For commercial success the subsequent recovery of the copper and ammonia is of importance.

This variety of silk is also being produced in fine glament form, which is as fine or even finer than real silk. Thiele first made this at Yarmouth by drawing out a thick filament to a much finer one before coagulation had fully set in. This was not a commercial success, but it is now being made on the Conti-

nent and marketed as "Eagle" and "Bemberg" silk.

This fine filament silk is also being made to some extent in this country (England). It is generally less lustrous than the coarser qualities of artificial silk, but otherwise its appearance and handle resemble the real article. This silk is also a regenerated cellulose, and thus will dye like mercerized cotton. The

PURIFIED COTTON OR WOOD PULP
Dissolved in Ammoniacal Copper Solution
SPINNING SOLUTION
Coagulated by Caustic Soda or Acid (Copper and Ammonia recovered)
FILAMENTS OF SILK
Bleaching
COMMERCIAL THREAD

Fig. 2. Showing Stages in the Manufacture of Cuprammonium silk; also Called Glanzstoff or Pauly.

stages in the manufacture of cuprammonium silk are represented by Fig. 2.

Tuning our attention to the third variety and at the same time the one most largely manufactured, namely, viscose, we find that another different chemical process is responsible for its production, which was entirely British in origin, and there can be little doubt that its successful development has been mainly due to the research carried out in Great Britain. The raw material is wood pulp, used in the form of sheets called bleached sulphite wood pulp.

This is taken and submitted to what one may term a mercerizing action, that is, it is steeped in caustic soda solution of 17 to 18 per cent strength. After squeezing out the excess of alkali, the alkali-cellulose is ground into a crumb-like mass in a mill. The mass, termed crumbs, was originally matured by storing in boxes, but later researches realized the importance of oxygen to this maturing process. The oxygen, originally obtained from the air, can be more quickly brought into play by the addition of sodium peroxide to the caustic soda, and even this action can be much accelerated by the further addition of certain catalysts, such as some compounds of iron or copper.

The amount of oxygen absorbed is only very small, but its effect physically is very great. By its use the process can be shortened, and solutions of cellulose obtained of varying viscosities from which silks of different qualities can be produced.

The next operation is the production of what is termed "cellulose xanthate," by the action of carbon bisulphide on the matured alkali-cellulose. By this reaction is formed a brown gelatinous mass, which is dissolved in dilute caustic soda. It is this solution which, after proper aging, forms the spinning solution. The aging has for its object the formation of a liquid which, on spinning, gives the best results, and during the process the mass of viscose loses carbon-bisulphide and becomes proportionately greater in cellulose. An alteration also occurs in the viscosity.

BLEACHED WOOD PULP
+ Caustic Soda
ALKALI CELLULOSE
+ Carbon Bisulphide
CELLULOSE XANTHATE
Dissolved in Caustic Soda
SPINNING SOLUTION
CRUDE VISCOSE SILK
Removal of Sulphur
Bleaching
COMMERCIAL THREAD

Fig. 3. Production of Viscose Silk.

The solution, after filtration and removal of air bubbles, is forced through perforated jets, either of platinum or some other metal. The spinning bath in which coagulation takes place usually consists of sulphuric acid, ammonium sulphate or sodium sulphate and glucose, but other baths may be used. The actual spinning is most usually carried out in a Topham centrifugal box, although parallel spinning on to bobbins may also be employed.

The thread, after leaving the coagulating bath, passes over a roller through a vertical reciprocating tube into a circular box, rapidly rotating on a vertical spindle. The centrifugal force throws the thread to the side of the box, where it builds up into an annular cake.

When the box is full the cake is removed and wound into skeins. Crude viscose silk is thus obtained. Subsequent purification is carried out by removing the sulphur in a bath of sodium sulphide, washing and bleaching. Once more it is interesting to observe that the final product is a regenerated cellulose, all the sulphur and soda being eliminated.

The method just described is one method for viscose silk production, but numerous others have been patented, especially in connection with the alkali treatment, but I cannot say whether they are used on the large scale. Fig. 3 shows the various stages in its manufacture.

Later research on viscose production has been that of Bronnert, who has succeeded in obtaining extremely fine filaments. Using the same spinning aperature as for the usual viscose filament, by altering the strength of the acid-spinning bath, various sizes of filaments can be obtained, even as fine as ¾ denier bring said to be now attainable. The size of real silk is 1¼ denier.

Viscose silk of 2 denier per filament is now being produced by the Bronnert system on the Continent, and a factory for large scale production is being erected in France. Messrs. Courtaulds are producing (in addition to the usual bulk production of ⅞ denier filament silk) much finer sizes. The luster is equal to the ordinary size silk.

Actate silk, now termed "Celanese," is the most recent of artificial silks, and after many vicissitudes is making headway. Acetate silk differs from the other three varieties in this important respect—the silk as marketed is not regenerated cellulose or the original raw material in another physical form, but cotton or cellulose containing the acetic acid groups in combination with it, or, to put it in another way, is the

(Continued on Page 32)

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JUNIUS M. SMITH ..... Business Manager

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Beginning Our Fourteenth Year

WITH this issue the Southern Textile Bulletin begins its fourteenth year, having first been published on March 2, 1911.

Our last Audit Bureau of Circulations statement showed the largest number of paid subscribers in our history and we are carrying today by far the largest amount of advertising that we have ever carried.

The Southern Textile Bulletin began in a very small way and its growth has been gradual but it ranks today as one of the four big textile journals in this country and can justly claim to lead in the South.

The Southern Textile Bulletin has grown because it has endeavored to render service to the textile industry of the South.

It has continually fought for those things that were best for the industry and against the traducers of the industry.

Even those who have not agreed with us in some of the positions we have taken have given us credit for working for what we thought were the best interests of the mills.

No publication has kept in closer personal touch with its subscribers and we believe that it can be truthfully said that it is easier to obtain subscribers for the Southern Textile Bulletin than for any other textile journal.

Since we began our fight for existence in 1911, two of the then existing Southern textile journals, the Textile Manufacturer and the Mill News, have passed out and five other textile journals that were launched in the South failed to make the grade and suffered early deaths.

The Southern Textile Bulletin came through largely because of the splendid support of its friends and a great factor of that support has been the loyalty and friendship of the textile salesmen, the men who sell machinery and supplies to the mills.

As we enter our fourteenth year we do so with the renewed determination to work for the upbuilding of a greater textile industry in the South.

Yarn Speculators Defended

THE Textile World came nobly to the defense of the yarn speculators with an editorial in answer to our editorial on "Bucketing Yarn Orders."

We did not charge the yarn sellers as a unit with any such practice, but we did charge and are prepared to prove that yarn orders were being "bucketed," or sold short by the leading speculators and that they were profiting by the decline.

If specific instances are needed we refer the Textile World to a mill at Uxbridge, Mass., that bought 60,000 pounds of 20/2 from a Philadelphia speculative yarn house at 54 cents, who "bucketed" the order for a while and finally placed it with a South Carolina mill at 51 cents. They made $1,800 in addition to their 5 per cent commission and the withholding of that order, together with others, had a weakening effect upon yarn prices.

If other instances are needed we are prepared to uphold our position.

The Textile World is privileged to defend the yarn speculators but our interests are with the yarn mills and we expect to do all we can to get them out of the clutches of parasites that are growing rich while wrecking an industry.

A Wise Selection

THE selection of B. B. Gossett, of Charlotte, as president of the Southern Yarn Spinners' Association will be unanimously approved as well as the announcement that the office of the Association will be moved to Charlotte and a full time secretary employed.

Mr. Gossett is not only an experienced and successful cotton manufacturer but a good organizer and a man of force.

Being also a cloth manufacturer, he knows that more stable and business,like selling methods can be evolved and we believe that during his term there will be some correction of the present evils.

Child Labor Fight On Again

ALTHOUGH Mr. Clark had been ill at his home since Sunday and was not in condition to make the trip, he left Wednesday night for Washington, D. C., and will appear before the Judiciary Committee on Thursday morning in opposition to the proposed Constitutional Amendment on Child Labor.

The committee was notified of Mr. Clark's illness but refused postponement in the following telegram:

Washington, D. C.

David Clark,
Editor Southern Textile Bulletin,
Charlotte, N. C.

Committee will proceed tomorrow. No postponement can be arranged.

GEORGE S. GRAHAM,
Chairman.

Rather than let the matter go to the House with no refutation of the misrepresentations of Miss Grace Abbott and witnesses, Mr. Clark will appear and present contradictory evidence.

The passage of Resolution by Congress is, however, practically assured.

Miss Abbott and her Bureau want the Government funds it will produce, certain manufacturers in other sections see in it a removal of competition and an intense campaign of misrepresentation as awaked a false public sentiment.

We do not and never have advocated child labor, but we have a contempt for the hypocrites who, for selfish reasons, are forcing through this Constitutional Amendment.

Clark's Tables

Elsewhere in this issue we are publishing Clark's Tables of Manufacturing Margins on Knitting Yarns. We previously published similar tables showing the manufacturing margin on weaving yarns. These tables have been found extremely useful and valuable to the mills in determining manufacturing costs for various yarn counts.

We will be glad to furnish copies of these tables to anyone who writes for them.

David Clark Acquires Entire Stock in Printing Co.

LAST March, David Clark acquired the controlling interest in the Washburn Press, Inc., which had for some time printed the Southern Textile Bulletin, Clark's Directory of Southern Textile Mills and our other publications.

The name was changed at that time to the Clark-Rush Printing Company, with S. O. Rush as manager, but Mr. Rush has now sold his interest and Mr. Clark becomes sole owner.

The name will be changed to the Washburn Printing Company on account of the former name being so well known in the printing trade, and in addition to printing the Clark publications the Washburn Printing Company will specialize on printing for cotton mills.

Cotton mill blanks will be standardized and furnished to the mills at reduced prices.

The opportunity of quoting prices is solicited by the Washburn Printing Company, 22 West Trade Street, Charlotte, N. C.

Covetous Texas

(From the Houston Post)

Is Texas going to sit idly by and watch the removal of the cotton manufacturing industry from New England into the Southeastern States, without making serious effort to bring some of the mills this way? That is what it is doing now.

"There is no longer any doubt about the intentions of the mill owners in the Northeast to move South. Repeatedly come announcements that this mill is pulling up stakes and going to locate in the cotton-producing section, or that mill is preparing to establish a branch nearer to the raw material.

The reasons for the removals are well known. They have been discussed freely throughout the country. Superior labor supply, proximity to the producing fields, and the numerous other advantages in the South are luring the makers of textiles.

But, thus far, the establishments moving South have almost invariably landed in North Carolina, or, perhaps, in South Carolina. Asheville reports the coming of a $2,000,000 plant from Rhode Island, as her latest manufacturing acquisition.

The tendency of industry to center in localities where similar industries are in operation is strong. But, outside of that, why should New England mills moving South give Texas, which produces one-third of the nation's raw cotton, no consideration whatever, and select locations in States which are already consuming more cotton than those States produce?

The only answer is that the proper inducements are not being made to get them to locate in Texas. Our natural claims for cotton mills are as good, if not better, than are those of the Southeastern States, but they are not being organized and presented in effective form.

The present is a crucial time for Texas. The movement of the mills is under way. Unless Texas secures some of them now and gets the textile industry on its feet in a big way, it will likely be a long time before another such opportunity comes.

In the language of the street, Texas should be "getting while the getting is good."

Knit Goods Exports

Washington, March 2.—There were 86,819 pounds of knit goods exported from the United States during December, valued at $62,812, according to a statement by the Department of Commerce.

Personal News

W. J. Hamilton, of North Charlotte, is now grinding cards at the Elizabeth Mills, Charlotte.

J. O. Epps has resigned as overseer Nos. 1 and 2 carding at night, Clover Mills Company, Clover, S. C.

A. S. Williams, of Central Falls, N. C., is now second hand in spinning at the Gem Cotton Mill, Gibsonville, N. C.

A. D. Bolt has accepted the position of overseer of weaving at the Mills Manufacturing Company, Greenville, S. C.

W. S. Huffstickler has resigned his position at Ozark Mills, Gastonia, N. C., and accepted position at Priscilla Spinning Company, Ranlo, N. C.

E. L. Jackson has resigned as superintendent of Mill No. 1, of the Athens Manufacturing Company, Athens, Ga.

J. T. Swan, of Lanett, Ala., has become night overseer of duck weaving at the Hillside Mills, LaGrange, Ga.

W. M. Barrett has resigned as overseer spinning and twisting, No. 1 and 2, Clover Mills Company, Clover, S. C.

D. W. Bumgardner has been promoted from overseer of spinning at Majestic Manufacturing Company to superintendent of Eagle Yarn Mills, Belmont, N. C.

R. F. Dellinger, from Hartsell Mills, Concord, N. C., has accepted the position of carder, spinner and twisting at Priscilla Spinning Company, Ranlo, N. C.

N. L. Whitten has resigned as overseer weaving at the Thomaston Cotton Mills, Thomaston, Ga., to accept a similar position at the Stark Mills, Hogansville, Ga.

W. M. Goff has resigned as overseer of spinning at the Gray Manufacturing Company, Gastonia, N. C., and will again devote his time to overhauling machinery.

J. L. Bobo has resigned as overseer of weaving at the Mills Manufacturing Company, Greenville, S. C., to accept a position with the Anderson Cotton Mills, Anderson, S. C.

Doris Hinson, from the Flint Mills No. 2, Gastonia, N. C., has accepted the position as second hand in No. 2 carding, Clover Mills Company, Clover, S. C.

J. T. Honeycutt has resigned as overseer of carding and spinning, Oakboro Cotton Mills Company, Oakboro, N. C., and has accepted position as overseer spinning and twisting, No. 2, Clover Mills Company, Clover, S. C.

A. H. Whitner has been promoted from second hand No. 2 carding day to overseer Nos. 1 and 2 carding at night, Clover Mills Company, Clover, S. C.

Oscar D. Grimes has resigned as superintendent of the Milstead Manufacturing Company, Millstead, Ga., to become general manager of all of the mills of the Athens Manufacturing Company, Athens, Ga.

J. W. Brown has resigned as superintendent of the Jonesboro Cotton Yarn Mills, Jonesboro, Tenn., and has accepted position as overseer spinning and twisting, No. 1, Clover Mills Company, Clover, S. C.

John H. Rutledge has resigned as secretary and treasurer of the China Grove Cotton Mills, China Grove, N. C., to become general manager of the Vance Cotton Mills, Salisbury, N. C., where he succeeds the late Walter M. Crump.

Obituary

W. D. Ingle.

W. D. Ingle, Southern representative of L. Sonnenborn Sons Company, of New York, died suddenly in Columbia, S. C., last Saturday, his death being due to heart failure.

Mr. Ingle was widely known to Southern mill men, having for many years been a very successful overseer of weaving and superintendent. He later became a salesman and for the past five years had been with L. Sonnenborn Sons Company.

Funeral services were held in Columbia, where Mr. Ingle formerly made his home.

J. W. Menefee.

Graham, N. C.—J. W. Menefee, prominent business man of this place and well known throughout the State, died at his home after an illness of only a few hours. Death was attributed to acute indigestion.

Mr. Menefee was stricken early Wednesday night and his son, Williamson, who was the only other member of the family at home at the time, called a physician immediately. A second physician was called and Mr. Menefee was relieved to the point where the physicians thought he was out of danger. He is thought to have died suddenly sometime next morning, as his son found him dead upon entering the room.

Mr. Menefee was 67 years old and had been connected with the textile industry for many years. Besides his wife, he is survived by three sons: Williamson, of Graham; Charles E., of Charleston, S. C., and J. W., of New York. He was a native of Virginia, but had been a resident of Graham for about 25 years.

MILL NEWS ITEMS OF INTEREST

Opp, Ala.—The new Opp Cotton Mills began operations this week.

Easley, S. C.—Alice Manufacturing Comuany has let contract to Parks-Cramer Company, of Charlotte, for additional equipment for their humidifier system.

Portsmouth, Va.—The Parker Hosiery Mills will rebuild their dye house and drying room which were destroyed by fire some time ago at a loss of $50,000.

Fayetteville, N. C.—Victory Manufacturing Company has let contract to Parks-Cramer Company, of Charlotte, for addition to their humidifying system.

Hartselle, Ala.—W. A. Florence, of this place, is planning the organization of a company to build a cotton mill here, and wants information on textile machinery, supplies and equipment.

Louisville, Ky. — The American Woolen Company has let contract to Turner Construction Company, New York and Atlanta, for construction of a woolen plant that will consume 1,000,000 pounds of wool per week.

Houston, Tex.—A new hosiery company, known as the Houston Knitting Company, has been incorporated by H. B. Pierce, H. N. Coffman and others. The company plans to install machinery for the erection of hosiery and sweaters.

High Point, N. C.—Contract for the new building to be erected here by the Slane Hosiery Mills, as previously reported, has been let to J. O. Connor, of this place. It will be two stories, 200x115 feet, brick construction.

China Grove, N. C.—China Grove Cotton Mills have placed contract with Parks-Cramer Company, of Charlotte, for equipping the combing and carding departments in their basement with humidifying apparatus.

Lanett, Ala.—The Gallivan Construction Company of Greenville, S. C., was awarded the contract to construct the cloth room for the Lanett Bleachery and Dye Works.

It is understood that six firms submitted bids for the erection of this building.

The proposed building will be one story in height and will have a floor space of 100 by 300 feet, and will be of a saw-tooth construction.

Among other contracts that the Gallivan Company has secured in the past few days is the one for the Lawrence Cotton Mill at Lawrenceville, Ga., and the one for an addition to the Belton Power Company, of Belton, S. C.

Tallassee, Ala.—Plans for the addition to the Mount Vernon-Woodberry Mill here are being prepared byby J. E. Sirrine & Co., of Greenville. The statement that Lockwood, Greene & Co. was handling this work, as previously reported in these columns, was an error.

Madison, Ga.—Operation of a mill to cost $500,000 for the manufacture of cotton goods will begin here within the next 60 days, according to the decision of more than 200 Madison citizens at a mass meeting here which authorized the mayor and city council to offer inducements to a new concern seeking to locate here. It is said that arrangements have been practically completed following the meeting.

Capt. J. E. Godfrey acted as chairman of the meeting and talks were made by Mayor R. W. Parker, members of the city council, Col. Albert Foster and Col. Emerson George, city attorney.

Lancaster, S. C.—The addition to the Lancaster Cotton Mills, contract recently awarded to Potter & Shackelford, Greenville, S. C., will be of mill construction, two stories and basement, 160x108 feet. Plans call for the installation of slasher equipment, 320 looms and cloth room machinery. J. E. Sirrine & Co., Greenville, S. C., are the engineers.

New Orleans, La.—The Maginnis Mills, of this city, Magnolia and Morehead, Miss., are to be sold at private sales. The plant has 5,000 spindles on yarns, the Magnolia plant has 12,000 spindles and makes sheetings. The Morehead plant has 5,000 spindles on yarns. It is said that the stock on hand has been practically all sold.

Greenville, S. C.—The plant of the new Southern Bleachery, at Taylors, near here, is nearing completion and is expected to be in operation within the next three weeks. The bleachery will have a capacity of 1,250,000 yards per week, which will later be increased to 3,000,000 yards.

The plant proper measures 718 by 314 feet, is built of reinforced concrete and is designed along the daylight saving plan. Six acres of floor space is contained within the plant.

The plant includes a gray room 179 by 74 feet, a kier room and a bleach house 161 by 90 feet, a starch and drying room 483 by 158 feet and a large power house, which will furnish the motive energy for driving the tremendous amount of machinery throughout the plant.

Water supply will be secured from the Enoree river, which runs barely a hundred yards from the site. This will make available some 25,000,000 gallons of water daily for the operation of the bleachery.

The village wherein operatives for the large plant will be housed is one of the most interesting features of the whole development. Fifty-six houses of the four, five, six and eight room sizes have been built. All are equipped with sewerage and electricity. They are of the most modern type and well constructed.

A general store will be operated for the benefit of operatives and arrangements are being made to school the children of employees.

Officials of the Southern Bleachery, Inc., are: H. R. Stephenson, president; Charles C. Geer, treasurer, and R. J. Stephenson, Jr., superintendent.

Sirrine & Co. were engineers and

architects on both the plant and village. The Gallivan Building Company, of Greenville, constructed the plant proper and Huntington & Guerry, of Greenville, handled the electrical work.

Greenville, S. C. — Construction work on the new weave shed and twister room at the Dunean Mills is practically completed.

The twister building, built of reinforced concrete and brick, measures 133 by 185 feet with basement and will house 8,056 Whitin twister spindles. This type of spindle differs from the ring spindles in that it allows manufacture of much more tightly woven goods, mill authorities explained.

The weave shed is one story, 209 by 260 feet. The shed is built of brick, matching in color the remaining portion of the big mill, and is an attractive structure. It is of the familiar and modern saw tooth construction type of roof, which admits of maximum light in the plant.

In the new weave shed has been installed 600 Crompton & Knowles looms, bringing the weaving capacity of the mill up to 1,800 looms.

All machinery in Dunean is driven by individual motors, this being one of the pioneer mills in this respect in the South.

The 250 additional residences makes the Dunean village one of the largest in the State.

J. E. Sirrine & Co. were architects and engineers on the Dunean job. Fiske-Carter Construction Company, of this city, erected the twister building, while Gallivan Building Company built the weave shed.

Seneca, S. C.—Bids for the erection of 85 new operatives' dwellings at the Lonsdale Mills will be received on March 8, through J. E. Sirrine & Co., engineers, Greenville.

The houses are being built to accommodate new employees, who will be engaged when new machinery is moved into the mill at Seneca from the Lonsdale plant in Rhode Island, it was said.

Five hundred additional looms are to be placed in the Seneca mill, it was said.

The Seneca plant was one of the Victor-Monaghan chain which was purchased by the Goddard interests last summer.

Bessemer City, N. C.—By virtue of a deal effective March 1, the Goldberg Mill interests at Bessemer City have leased from the McLean interests the rights and good will of the McLean Mills at Bessemer City for a period of one year, with privilege of additional leases if desired. Frank, Max and Robert Goldberg are owners of the American Cotton Mills, Inc., at Bessemer City. The superintendent of the American plant, C. G. Cargill, is now in active charge of both the American and McLean Mills.

The McLean Mill has been owned and operated by the A. A. McLean interests for several years. This plant has 6,000 producing cotton mill spindles. The American Mills have 5,000 active spindles, making a total of 11,000 spindles now operated by the Goldberg interests.

Chester, S. C.—The annual meeting of the stockholders of the Baldwin Cotton Mills of this city was held this week at the mill. The annual reports of the officers showed a good year, with the usual dividend paid the stockholders. The mills are running full time, both day and night, and while there is a general condition of apathy at this time affecting mill operations all over the land, and leading to curtailment at many points, the Baldwin is running at full blast.

Alexander Long, of Rock Hill, was re-elected president and treasurer, and E. R. Lucas, secretary and assistant treasurer.

J. P. Stevens, M. T. Stevens and Robert C. Stevens, of New York, all big stockholders in the Baldwin Cotton Mills, attended the meeting.

The Dyeing of Fabrics

(Continued from Page 10)

Going a step further could we not truthfully say that any dyestuff used is fast if it unfailingly withstands all of those conditions it would ordinarily meet even though it might fall down under some unusual treatment? Why should a throwster color be expected to resist sunlight any more than that a ditch-digger should be able to compute in calculus?

And so friends I would bring you a new thought—don't expect each and everyone of us to be a happy combination of Dempsey and Edison. Neither expect to find in any one dyestuff the brilliancy of the spectrum shades combined with total immunity to shortcomings.

To have every desire satisfied is worse than having none at all granted. Who was it said, "With pleasure drugged he almost longed for woe?"

W. E. Poag.

W. E. Poag, overseer of spinning at the Draper-American Mills, Draper, N. C., died at his home in Draper last week. Mr. Poag had for many years been a successful and efficient overseer and was widely known as a man of unusual ability and character. He was a prominent citizen of Draper and a member of the Carolina Co-operative Council of the Draper, Spray and Leaksville Mills.

The following resolution was adopted by the council:

"Whereas, it has pleased our Heavenly Father to take from our midst William Edward Poag, esteemed member of the Carolina Co-operative Council of the Carolina Cotton and Woolen Mills Company, foreman of spinning in the Draper Mills, and beloved citizen of Draper, N. C.,

"Therefore, be it resolved:

"First, that we, having lost so valued a council member, are deeply grieved and acknowledge an irreparable void.

"Second, That we extend our sympathy to the bereaved family, and trust that those left behind will emulate the high standard upheld by the father.

"Third, That a copy of these resolutions be sent to the family; that a copy be placed on the minutes of the council, and that a copy be sent to the Southern Textile Bulletin and our plant organ, The Arrow, for publication."

Textile Growth and Yankee Invention

IT is often said that textile machinery, as it exists today, originated in England.

It is true that the mechanical carder of Lewis Paul, the spinning jenny of James Hargreaves and the flyer spinning frame of Richard Arkwright were invented in England before the American colonies had begun to develop into manufacturing communities.

It was not long after the Declaration of Independence, however, that America's independence of thought along textiles lines began to assert itself.

In 1790, the United States Patent Office was established. In 1794, a patent was granted to Eli Whitney for his cotton gin. As the United States was then an agricultural country, it is not surprising that its first great contribution to the textile industry should pertain to the raising of cotton in the South. To a New Englander, proud of Yankee inventive genius, it is gratifying that Eli Whitney was a native of Massachusetts.

Not until the War of 1812 did the United States begin to feel the need of complete economic independence. Cotton mills then began to multiply rapidly and from that time to the present American improvements in the methods of manufacture of textiles have made themselves felt in increasing numbers.

Although spinning with a flyer was done by Arkwright on his spinning frame of 1775, it remained for an American named John Thorpe, of Providence, R. I., to invent the rotating spinning ring, as well as the process of cap spinning, for which he obtained patents in the year 1828, and for two other Americans, Addison and Stephens, of New York City, to invent the traveler, in connection with ring spinning, in 1829.

Roving remains to this day in the realm of the flyer, but by far the greatest part of spinning and twisting of cotton is done with the ring and traveler; also by far the greatest part of spinning and twisting of worsted is done with a cap.

There are many other fundamental improvements in the manufacture of textiles for which America is responsible. Perhaps none is more far-reaching than the spindle of Rabbeth and Atwood, patented April 2, 1867. Rabbeth was a native of Ilion, N. Y., and Atwood's home was in Williamantic, Conn.

This invention, which consists in making the spindle and bolster a self-contained unit supported by one rail instead of two made it possible to increase the speed of the spinning spindle from 4,000 or 5,000 to 9,000 or 10,000 revolutions per minute, and was largely responsible for the superseding of the mule by the ring spinning frame.

A number of important improvements in the textile industry have been made by Americans during the past thirty years. Among these are the automatic loom, the hand-knotter, the automatic distributor for cotton openers and the warp-drawing and warp-tying machines.

In studying the development of the textile industry in this country, it is interesting to note the part played a century or so ago by the founders of the present large textile machinery companies.

On January 7, 1816, the self-acting loom temple was patented by Ira Draper, the founder of what is now

the Draper Corporation. His invention served as the basis for all later loom developments. The rotary temple allowed a weaver to run two looms instead of one. This invention of 1816 is of interest not only because of its importance, but because it was the forerunner of the automatic loom, which made it possible for one weaver to run twenty or more looms, developed by the descendants of Ira Draper, in 1894.

On July 30, 1832, John C. White, of the Whitin Machine Works, patented a "machine for spreading and picking cotton." These machines were considered among the finest built in those early days.

On May 4, 1838, William Mason, of Taunton, Mass., patented a "spinning machine," which bears a very striking resemblance to the spinning frames of the present day. He also made other important improvements in the textile industry. He was the founder of the present Mason Machine Works.

On March 28, 1834, Otis Pettee patented the double-arm flyer. He was the founder of the Pettee Machine Works, which became part of the Saco-Pettee Company, and later the Saco-Lowell Shops. This early improvement in the flyer is of interest, not only because it is still in use on certain machines, but because it may be said to be the predecessor of the modern, pressed steel flyer.

Thus we see the part played by the early builders of textile machinery in America. What was formerly the work of a man or a small group of men, has become the work of engineering departments and research departments.

Many new inventions are in process of development. The coming of the weaver's knotter will be welcomed as an important improvement over the ordinary hand knotter. A great increase in activity in improving textile machinery has been noticeable since the close of the World War. Inventions are being developed which will have as profound an effect on the textile industry as the Rabbeth spindle and the automatic loom.

This continuous and ever-increasing flow of important improvements will be in the future, as it has in the past, America's great contribution to the textile industry.—Boston Transcript.

Hosiery and Underwear Market

Philadelphia, Pa.—Unsettled conditions in the hosiery market resulting from uncertainty of raw materials prices and dullness in underwear are reported in the March 1 review issued by the Federal Reserve Bank of Philadelphia.

"The feature of the month in the hosiery trade," it says, "has been a reduction in the price of artificial silk, in some cases amounting to more than 30 per cent. This very large and generally unexpected drop has had a serious effect upon the trade, which, because of the recent severe fluctuations in silk and cotton, had not been in a satisfactory condition for some months. During this period of disturbed silk and cotton quotations, prices on artificial silk had been unchanged, and this led to a considerable increase in its use in hosiery; in some cases it was used along, but more frequently in combination with pure silk, mercerized cotton, or wool. Many jobbers either had stocks of such hosiery on hand or had contracted for it with the mills, so that although the reduction in hosiery prices is much smaller than that on the raw material, jobbers are nevertheless facing a loss. This situation has led many of them to demand a reduction on goods already contracted for, and in other instances to cancel orders. Some hosiery manufacturers have in turn asked the artificial silk makers to grant them a rebate in price equal to the recent decline.

"In the face of this disturbance, silk quotations are lower, and at the same time cotton and mercerized yarns have also eased off. Quotations on hosiery, too, have been revised downward, and as stocks in the hands of both manufacturers and wholesalers are at least moderate, the trade has become somewhat demoralized. A number of manufacturers say that at present it is difficult to sell hosiery at a price which assures any profit, and therefore some mills are working at only a small percentage of their capacity.

"Some manufacturers whose output is fancy hosiery or specialties report a fair business, but in chiffons, which recently have been in good request, complaint is heard of many rejections on account of alleged irregularities or imperfections. This has resulted in the sale at low prices of a considerable quantity of irregulars or seconds, and these sales have had a bad effect upon the market.

"The export business during the present year has also failed to show much increase over that of 1922, and except to Cuba and 'all other countries,' was no better. In fact, shipments to the United Kingdom decreased sharply and were smaller than in 1921, which was a very poor year."

Textile Shipments to Contiguous Territories.

Details of shipments of American cotton goods to non-contiguous territories during 1923 were reported by the Commerce Department.

Shipments during 1923 were: To Alaska, $1,181,643; to Hawaii, $4,158,468, and to Porto Rico, $13,713,257, compared with $991,130, $3,207,726 and $9,294,397, respectively, in 1922. Cotton piece goods constituted the largest single item in these shipments for both years, amounting in 1923 to 561,024 square yards, valued at $129,117, for Alaska; 9,772,744 square yards, worth $2,090,633, for Hawaii, and 50,883,797 square yards, with a value of $8,706,483, for Porto Rico. Sales of American cotton goods to Hawaii and Porto Rico showed a considerable increase over 1922, when Hawaii bought 7,407,364 yards, worth $1,448,964, and Porto Rico took 35,145,815 yards, valued at $5,857,369.

Manufacture of Artificial Silk

(Continued from Page 25)

same chemically as that dissolved in the solvent for spinning.

Cotton is usually the raw material used. This, when purified, is converted into a compound containing acetic acid, or, what is termed chemically, an acetyl compound of cellulose. This may be compared with the similar nitro-cellulose except that acetic acid replaces the nitric acid. This derivative is dissolved in acetone and the solution filtered. The viscous solution is then forced through fine openings in a metal cap, the issuing filaments are coagulated by a current of warm air, and the solvent recovered as far as possible.

The filaments are then brought together to form the desired count of thread and the requisite twist given to it. The composition of this silk corresponds chemically to approximately the di-acetyl derivative. Fig. 4 represents the processes in the manufacture of acetate silk.

Chardonnet silk is easily distinguished by the blue color obtained when it is treated with concentrated sulphuric acid, in which is dissolved a crystal of diphenylamine. If already dyed, the color must first be removed. The distinction between viscose and cuprammonium silks is not easily carried out, but, if undyed, a treatment with concentrated sulphuric acid differentiates between the two varieties. Viscose becomes considerably more reddish-brown, cuprammonium going more straw colored.

The method of taking cross sections is also useful, and helps to distinguish certain varieties. The cross section or contour of the filaments is of importance when comparisons of what is term "covering

COTTON OR WOOD PULP
PURIFIED
+ Acetic Anhydride, etc.
CELLULOSE ACETATE
Dissolved in Acetone
SPINNING SOLUTION
COMMERCIAL THREAD
Bleached if necessary

Fig. 4. Processes in the Manufacture of Acetate Silk

power" are being made. Viscose, by alterations of the xanthate and composition of the spinning baths, can be spun to any desired cross section. A serrated contour is most valuable for weaving purposes, as this form gives the greatest cover and the luster is not diminished.

Acetate silk is the most easy to identify. On ignition it melts and drops off into beads of carbon, similar to sealing wax. All varieties of artificial silk are more lustrous than real silk, viscose being particularly so, and celanese being of a more subdued luster. Celanese is a non-conductor of electricity and also of heat; it feels warmer than the other varieties. In handle, comparing counts of equal denier for filament, celanese is somewhat softer.

There is a great difference between the three hydrated silks, Chardonnet, viscose and cuprammonium, on the one hand, and acetate silk on the other, when submitted to the action of water, chemical agents and dyestuffs. The first three are easily wetted with water, but the latter not so readily. Boiling water has little effect on nitro-cuprammonium or viscose silks, but the greater part of the luster of acetate silk is lost. This silk also shrinks and becomes soft and wooly in character. This behavior also occurs to an extent depending on the time treated at temperature below 100 degrees C., but it is stated that the later manufactured celanese will stand 85 to 90 degrees C. without injury.

Treatment with boiling 1 per cent caustic soda shows great differences between the various types. Chardonnet, cuprammonium and viscose are not greatly affected; viscose stands a kier treatment with 2 degrees Tw., caustic soda. Acetate silk is saponified, shrinks and loses luster and weight.

The dyeing of artificial silk is at the present time the subject of much research, especially the dyeing of actate or celanese silk. The three hydrated silks dye on the whole like mercerized cotton; that is, they can be dyed directly with the direct cotton colors, vat and sulphur colors. Chardonnet, moreover, owing to residual traces of sulphur or sulphur compounds will dye directly with basic colors without preliminary mordanting and viscose silk also, to some extent, exhibits this property.

Celanese silk, however, owing to its still containing the acetic groups will not dye directly with direct cotton, sulphur and vat colors. If a part of the acetic acid is removed by a treatment with caustic soda, a process called saponification, dyeing with these colors takes place, but this method, owing to difficulties encountered is, I understand, very little used at present.

There are, however, certain dyestuffs which can be used for acetate silk, those of the basic group and some acid colors of weak acidity. The basic dyestuffs owe their power of attraction to the acid groups contained in the silk; it is, in fact, somewhat similar to the dyeing of tannined cotton with the same class of colors.

Other methods for dyeing acetate silk are the absorption of certain organic substances and subsequent formation of color by diazotization and development; also the use of Ionamines, which, although they can be used directly, giving dyed shades, are generally better developed. Much research is going on in this connection, and the tendency is to find dyestuffs which give the desired shade by a direct dyeing.

A new series of dyestuffs have recently been put on the market by the Scottish Dyes Company solely for dyeing acetate silk. They are stated to dye only this fibre and are used directly without additions, although they may also be dyed from a reduced alkaline hydro-sulphite vat. Some are probably chemically allied to vat colors and with few exceptions possess very good fastness.

The dyeing of artificial silk alone either in the hank form or as knitted material is a much simpler

operation than dyeing artificial silk when it is woven or otherwise mixed with other fibres. The three regenerated celluloses, viscose, cuprammonium and nitro silks, have presented no insuperable difficulties in piece dyeing when woven with other fibres, as their dyeing affinities are comparable to those of mercerized cotton, but the combination of celanese silk with these fibres presents certain difficulties.

FOUR—Manufacture of Artificial

However, celanese and cotton can be dyed on the jigger. The combination of celanese and wool has not been worked out yet, but as wool to be well dyed requires a boiling bath, far greater difficulties have here to be overcome.

In the discussion which followed the presentation of Mr. King's paper, the subjects of bleaching and finishing were brought up. The necessity or otherwise for bleaching was questioned and Mr. King's reply indicated that the answer depended upon the purposes for which the silks were to be used. In any case, celanese silk would not stand the kier nor, of course, alkali, but would stand bleaching powder. The other varieties when woven with other fibres would, speaking generally, withstand the usual bleaching processes.

To the query as to the effect of prolonged exposure to light of the four varieties of artificial silk, Mr. King replied that he was not aware of any work that had been done. There was good evidence that prolonged sunlight had an effect of a weakening character upon cotton, and that might indicate that upon the regenerated cellulose of these artificial silks much sunlight might be harmful.

As representing finishing interests, S. H. Higgins assured manufacturers that finishers would be able to meet requirements. Failure to largely develop the artificial silk industry in England, he stated, would not be owing to any deficiencies from the standpoint of finishing.

Some Improvement in Goods Market

(Continued from Page 21)

present drop from July to October cotton.

"Some of the largest inquiries have come from the bag trade and for the first time in many weeks, there has been an opportunity to materially reduce mill stocks of such constructions. There has also been some rather good though quiet buying by a few of the larger bleachers and printers. We believe that the increase in vloume is not a matter of the past week only, but something that has come to stay. The jobbing trade will very likely be slow in coming to this conclusion, but will come to it nevertheless.

"Southern dress gingham manufacturers have made prices during the week, with a fair volume of business resulting. Competition here, as everywhere else, is keen. Printers have done nothing as yet in the matter of new prices, but bleachers have made general reductions during the week approximating current print cloth levels.

"We notice the increasing number of small orders for immediate shipment, often by express, and are under the impression that wholesale, retail, and cutters' stocks have all been reduced since the end of December. At that time, Government figures recently published, show that cutters of work clothing as well as the jobbers and retailers, held sized stocks.

"We spoke a week ago of the likelihood of better export business developing with the low prices that have been made, and we think we see signs of this in several directions. Both Porto Rico and Cuba have shown considerable interest in the lower grade ginghams, at the new prices.

"With raw silk and silk goods, the situation seems to be of much the same character as with raw cotton and cotton goods. The buyer's attitude has been the same and has brought about much the same results in the raw material and manufactured goods. The drop in artificial silk has, of course, added a further complication to the silk situation.

"As far as we can learn, the situation in cotton manufacturing is much the same the world over; in some cases, perhaps, Germany being one, rather better—in others rather worse. The cotton mills of China have absorbed a tremendous volume of business that formerly went to Manchester, and occasionally came to us, and the Japanese have been invading many markets in the Levant and the Red Sea districts, and in western South America and Central America, where Japanese goods were unknown only a few years ago. Throughout the world the manufacturer is confronted with the scarcity of cotton, and at the same time with his inability to arouse any great enthusiasm on the part of the buyer.

"It was in April of last year that the buyer began to discount a coming big crop, and realized in August that he had made a mistake. Nevertheless, he began to discount the coming crop in the same way this year back in January, and a very large part of that discounting has already taken place.

Mill Men to Meet at Blowing Rock

The South Carolina Cotton Manufacturers' Association has accepted the invitation of the North Carolina Association, recently extended, to meet in Blowing Rock, N. C., on June 27 and 28, it was stated by Capt. E. A. Smyth, one of the board of governors.

The invitation from the North Carolina Cotton Manufacturers' Association was received following the convention recently held in Greensboro. Inasmuch as the South Carolina body meets annually in June it was decided to accept the invitation and to meet outside of the State.

The South Carolina Cotton Manufacturers' Association, of which James D. Hammett, of Anderson, is president, represents 114 cotton mills of the State.

SUPERINTENDENTS AND OVERSEERS.

We wish to obtain a complete list of the superintendents and overseers of every cotton mill in the South. Please fill in the enclosed blank and send it to us.

_____ 1923

Name of Mill _____

Town _____

_____ Spinning Spindles _____ Looms

_____ Superintendent

_____ Carder

_____ Spinner

_____ Weaver

_____ Cloth Room

_____ Dyer

_____ Master Mechanic

Recent changes _____

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*Indicates advertisement does not appear in this issue.

Progress in Co-Operative Marketing

CO-OPERATIVE cotton marketing associations, composed of growers only, will market this year between $125,000,000 and $150,000,000 worth of cotton. Last year the volume of business done by these associations amounted to just about $100,000,000 and the year before it was $40,000,000.

More than 80,000 new members were obtained by the co-operatives in the twelve cotton States that are members of the American Cotton Growers' Exchange, a federation which maintains a sales organization for the benefit of these States. The exchange has its sales headquarters in Atlanta, with branches in Boston, Liverpool, Bremen, Havre, Greenville, Spartanburg and Charlotte, as well as representatives in Barcelona, Rotterdam, Copenhagen, Vienna and other European centres. There are also sales managers in each of the twelve State organizations and sales are made by both State and national organizations, although the exchange is doing a larger proportion of the foreign business as its contacts with those markets are being perfected.

In New England it is the policy of the co-operatives to sell to dealers and not to spinners. J. K. Crossman, in charge of the Boston office, says that the exchange realizes that existing agencies are unquestionably rendering a service that is recognized as such by the mills, for, if not, they surely could not have existed for so long a time. "It is not our intention," he says, "to disrupt or disorganize existing agencies, but rather our intention, which is partly a selfish one, to take advantage of such agencies to the fullest extent possible."

The Boston office represents the American Cotton Growers' Exchange, and each of the twelve State associations. A buyer purchasing from the exchange is sold cotton for account of a specified association, and it is to this specified association that the buyer must look for the filling of his contract. It does not matter from which association a buyer purchases as regards responsibility and reliability, since there is nothing to choose between them all. Each State is absolutely responsible, financially and morally, for its contracts, but it should be understood that the buyer is trading with the American Cotton Growers' Exchange for account of some one of the associations.

The entire sales organization of the exchange is in charge of C. B. Howard, with offices in Atlanta, Ga. Mr. Howard is one of the best-known cotton men in the South, and is rapidly building a world-wide sales system.

Mr. Howard calls attention to the great spread between what the grower gets for cotton under the old system and says that it is the purpose of the co-operatives to cut out a good deal of worthless motion characteristic of the old system as well as to do away with certain intermediates who are not really needed in the distribution of cotton. Under the co-operative plan the farmer gets more nearly what the spinner pays without necessarily increasing the cost to the spinner.

The co-operatives are trying to market their cotton gradually, as needed by the spinners. This practice is contrary to what the farmers have been doing in the past. It has been customary to dump practically all the crop in about two months' time—much faster than the mills could possibly consume it and this is what causes what is known as the "autumnal dip" in the cotton market, during which time cotton prices nearly always go below actual value of cotton based on the law of supply and demand.

Inasmuch as there has been a short crop for several years, some alarm has been voiced as to the supply, whether there will be sufficient to enable the mills to meet the consumer demand. The co-operatives hope to return enough money to the growers to enable them to continue to produce cotton, even increase the production. The spinner is equally interested with the co-operatives in this regard, according to the co-operative leaders, and should be sympathetic with efforts to enlarge the growers' organizations.

Nearly all the growers deliver their cotton to their association before Christmas, and this cotton is carefully graded and classed and placed in pools of even running grade and staple. The co-operatives are establishing reputations for delivering what they sell, according to Mr. Howard, and they are delivering cotton that is in better shape than the average bale that goes to the spinners. For example, there is no "country damage" in cotton handled by co-operatives. Every bale is sent to the association warehouses immediately after it is ginned and is not exposed to the weather. Mr. Howard is selling cotton in Europe and England every day without placing any insurance against country damage.

One of the greatest advantages claimed for the co-operatives is that the buying power of the farming class in the South is increased and this makes a better market for manufactured goods in the cotton belt. When farmers in this section get on a par with farmers of other sections of the country there will be a wonderful new outlet for goods made in the industrial centres and the merchandising of manufactured articles will be increased wherever the co-operatives have gained a strong hold.

The co-operatives functioning by States are not all of the same strength. Some of the associations have bought their own buildings, notably Texas and Oklahoma. The possession of handsome brick office buildings gives the co-operatives an air of stability, which argues for their permanence. Each of the States provides for a cash reserve. In some instances this is used as a loan fund for members who need production credit—or rather money

(Continued on Page 42)

Ga. Curtailment Estimated at 10 Per Cent

Atlanta, Ga.—With the exception of the elimination of night work in Mill No. 2 of the Piedmont Cotton Mills at Egan which is scheduled to begin next week and curtailment from a six to a four-day week at Mill No. 1 of the company, beginning Thursday night, because of no disposition to accumulate stocks, there is a more cheerful feeling in the textile situation in this city and in the State.

The Piedmont is the only mill in this city or vicinity to curtail, others running full day time and some of them a little at night.

P. E. Glenn, secretary-treasurer of the Exposition Cotton Mills, and secretary of the Georgia Cotton Manufacturers' Association, states that the average curtailment for the State is between 10 and 15 per cent or the same as a week ago Mr. Glenn said that the Exposition Mills, which have 60,000 spindles and 1,600 looms turning out specialties in sheetings and drills, are running full day time and some at night. He said that the last decline in cotton brought in more inquiries and sales.

"The situation is more encouraging," he said. "The decline in May cotton to around 28½ cents inspired more disposition on the part of buyers to make offers and do some buying. If cotton develops more strength and shows a definite tendency to advance I believe buyers will become considerably frightened and enter the market more freely especially in view of the fact that cotton goods are selling considerably below replacement prices."

Mr. Glenn said that his mills, and few, if any, in the South, are not accumulating goods.

According to L. J. Elsas, second vice-president, the Fulton Bag and Cotton Mills, which have 100,000 spindles, and 2,500 looms, continue to operate full day time, their regular policy.

George W. Scott, Jr., of the Scottdale Mills, Scottdale, operating 11,068 spindles and 320 looms and with sheeting their output, said the mills continue full day time operations—54 hours weekly. These mills never have followed a policy of night operations. Mr. Scott said that no curtailment is contemplated, as the mills are sold well ahead.

Mr. Scott said that the decline in cotton caused an uncertain state of mind among buyers, leading to hand-to-mouth buying in some lines, but that the Scottdale Mills have been in a very fortunate position, probably feeling this attitude of buyers very little. He declared that if cotton should take on a definite upward tendency it would stimulate spirited buying of goods.

The Georgia Duck and Cordage Mills, at Ingleside, Ga., with 2,500 spindles, and at the present turning out heavy duck mostly, are running full time.

The Whittier Mills at Chattahoochee, with 15,000 spindles and turning out yarns, are operating full time and some at night.

The Gate City Cotton Mills, at East Point, Ga., with 15,000 spindles are operating full day shift and sold comfortably ahead. These mills never operated at night unless compelled to in order to get out rush orders.

"We are in a healthy condition," said an official of the Gate City Mills.

"This mill turns out knitting yarns and we are not apprehensive whatever of conditions during the remainder of the present cotton season, and by the end of the current season, probably long before, I believe, cotton goods will have increased sufficiently to cheer up the entire textile industry, especially those who have sufficient cotton or have controcted for their supplies, to keep running.

"The price of cotton is due to come back. It is too cheap and the available supply is decreasing daily, with about eight months ahead before the new crop begins to reach the market in any long volume. The world needs a lot of goods now and will need considerably more before the new crop is available.

"I am not pessimistic about the price of cotton if it is restored to higher prices, which I believe is inevitable."

The Piedmont Cotton Mills produce wide duck and coarse yarns. T. W. Tift, president of the mills, declared that the reason the mills were on the curtailed schedule is because it is not going to accumulate goods. He said that buyers have been buying hand-to-mouth for the last 60 days, and that mills cannot afford to produce and stock up, thus carrying the load. He said not only has demand been poor but there has been no profit for mills for some time. "Cotton goods are below replacement prices," he said.

The Piedmont Mills are operating 30 per cent of their 96 looms at No. 1, which has 6,000 spindles. Mill No. 2 has 4,000 spindles. This mill, which cut out night work Monday, has been running on a 120-hour weekly basis and after Monday will operate 60 hours. The mill No. 1 after Thursday starts on a 44-hour weekly schedule instead of 60 hours, which has been mantained.

Mill Stocks Show Decline for Week

Common and preferred stocks of the Southern cotton mills showed a further decline during the past week, the common issues registering a greater decline than the preferred, according to the weekly review of Southern mill stocks prepared by R. S. Dickson & Co. Acme declined one point as did Anderson, while Brogon, bid firm at 117 a week ago, was offered freely at this price but no demand was noted. The shares closing the week at 115 bid with an asking price of 117.

Cabarrus was weak and lost four points, Clifton was down a full point and Gaffney was offered at 95 with bids of 97. No actual change in Victor-Monaghan was noted, as the stock was offered last week at 119 bid and 121 asked, while the closing figure this week was 117 bid and 119 asked ex the 2 per cent dividend payable March 1, to stockholders of record February 20.

HIGHLAND PARK'S CHAMPIONSHIP TEAM

The above picture shows the Girls' Basketball Team of the Highland Park Manufacturing Company, of North Charlotte. This team won the girls' championship at the recent tournament of the Southern Textile Basketball Association, the tournament being held in Textile Hall, Greenville.

The Highland Park girls made a splendid record at the tournament, not only by their playing, but their good sportsmanship, and have received a great deal of praise for conduct at the tournament.

Textiles Leading Foreign Trade Item

Washington.—Textiles represented 24.5 per cent of the total value of the country's domestic exports and 26.6 per cent of the total imports of 1923, compared with 22.9 per cent and 27.5 per cent, respectively, in 1922, according to an analysis of American foreign trade in textiles for the year prepared by Edward T. Pickard, chief of the textile division of the Commerce Department.

For statistical purposes, exports and imports are divided into nine principal groups. In point of value the textile group is the most important, and, withthe exception of "vegetable food products, oil seed, expressed oil and beverages," far exceeds all other groups. It is interesting to note that the trend of textile exports for the past two years has very closely followed that of general exports, the peak months being November, 1922, and December, 1923, for both textile and general exports. The fluctuations in United States textile purchases abroad are not so marked as those

The total value of textile exports in 1923 was $1,002,041,446, an increase of general imports.
of 16 per cent over the 1922 figures $863,679,758). This gain, however, represents in most cases an appreciation in value rather than in quantities exported. For example, 1923 shipments abroad of raw cotton were almost 20 per cent greater in value, but the quantity was 13.65 per cent less than in 1922.

In 1923 United States foreign sales of piece goods registered a decline of 123,000,000 square yards, but the drop in value amounted to only $6,-000,000. The heaviest losses occurred in gray (unbleached) goods exports, which decreased by 74,000,000 square yards. Of the balance bleached goods accounted for 22,-000,000 and yarn or stock-dyed for 12,000,000 square yards.

The advance in the price of American cloths has been a feature of the piece goods market in 1923. The average price of three gray sheetings and five print cloths, for which the textile division has tabulated weekly prices during the past two years, increased 17 per cent in 1923 compared with 1922. This rise in price undoubtedly represents an important factor not only in the losses in our foreign cloth markets but in the invasion of the domestic market by imported piece goods, particularly from the United Kingdom.

Exports of wearing apparel in 1923, as a whole, showed improvement, slight gains over 1922 being registered in cotton, wool and silk lines, waterproofed clothing, and hats and caps other than straw. American cotton and silk hosiery sales abroad increased but artificial silk hosiery lost ground.

Foreign Yarn Trade Notes

France.

General conditions in the cotton spinning plants are good with increased activity in cotton yarn business in the Lille region at the end of the month.—Cable from Acting Commercial Attache J. F. Butler, Paris, February 12.

Italy.

The Manifacture Cotoniere Meridionali of Naples continue to advise against the "holding off" policy adopted by some spinners in Northern Italy in connection with purchases of American raw cotton. They predict still higher prices and feel that inasmuch as cotton goods are articles of necessity consumption will continue at the present rate despite the increase in prices. —Commercial Attache E. C. MacLean, Rome, anuary 22.

Belgium.

The situation of cotton spinners remains favorable, though the price of yarn is not on a parity with raw staple prices and dollars and pound sterling exchange. German purchases continue, as well as the excellent demand from Grance and Great Britain. American yarns have undergone a price increase of 25 centimes per kilo.—Acting Commercial Attache Samuel H. Gross, Brussels, January 21.

Mexico.

The spinning section of the Mexican textile industry, with a total of 801,639 spindles in operation, produced 6,090,290 pounds of cotton yarns valued at 6,503,893 Mexican dollars during the year 1923.—Consul Thomas D. Bowman, Mexico City, January 17.

England.

Grey yarns are being exported from the United Kingdom in substantially smaller quantities to Germany, the Netherlands, Switzerland, China, and India. On the other hand there have been some compensating increases in the exports to France, Bulgaria, Rumania, and the United States. Bleached and dyed yarns have also been exported in somewhat reduced quantities. With regard to the import trade, yarns of all descriptions have been coming into the home market in much larger quantities during the past year.—Trade Commissioner Hugh D. Butler, London, January 15.

Austria.

Yarn production during November, amounting to 3,227,000 pounds, showed a decrease of nearly 11 per cent from that of October. This decrease may be partly accounted for by the reduction in the number of spindles reporting and the reduction of spinning hours by 9 per cent. Total yarn deliveries during the month of November were 3,096,000 pounds, or about 21 per cent less than those of October. Sales, however, were the greatest recorded for any month of the year, amounting to 3,231,000 pounds, or 30 per cent more than those of the month of October.—Assistant Trade Commissioner E. M. Zwickel, Vienna, January 11.

Australia.

Although no statistics are available showing the importation of cotton thread into Australia, it is believed that practically all such threads in this market are of British origin. Nevertheless there seems no reason why American manufacturers should not be able to develop a demand in this market for their product providing of course that their quality and price are competitive with the British. It will be necessary to underquote English manufacturers by about 5 or 10 per cent in order to overcome the preference in duty allowed to English threads which enter Australia duty free.—Vice Consul P. Harley Moseley, Sydney, January 2.

Greece.

It is believed that there is a good market in Greece at the present time for certain classes of cotton yarn in view of the fact that the local spinning mills are not equipped to produce sufficient quantities to supply domestic requirements. The mechanical equipment of mills in Greece is limited and only certain grades of yarn can be produced which stimulates the demand for other types.—Clerk Charles E. Dickerson, Athens, January 2.

China.

Yarn prices have shown an upward tendency throughout the week. January deliveries for 16s best grade are quoted at Taels 176.70 per bale of 400 pounds, or approximately 32¼ cents gold per pound on December 27 as compared with Taels 173.80 on December 22. The yarn market has registered only small sales despite the rise recorded above. — Assistant Trade Commissioner G. C. Howard, Shanghai, December 29.

Remarkable Japanese Textile Recovery

The come-back of the cotton yarn and the cotton textile industries of Japan following the disaster has been remarkable in view of the fact that they lost close to 15 per cent of their total working machinery during the earthquake and fire that followed. In spite of these losses the output of cotton yarn and textiles during 1923, according to advices to the Department of Commerce, was approximately the same as it was during 1922, when production was by far the greatest in the history of the industry.

Several factors have made it possible for Japan's cotton yarn industry to maintain its output in spite of a loss of 15 per cent of its equipment. Due to over-expansion the industry prior to the disaster had a surplus spindleage amounting to about 15 per cent of the total. This marginal surplus was acting as a drag upon the entire industry and was becoming quite a problem. The destruction of about 680,000 spindles just about wiped out this surplus and mills that had been working at 80 to 85 per cent capacity immediately speeded up to full time. Within a remarkably short time the output was back to almost normal and the industry itself placed in a better position.

The outlook of Japan's cotton yarn and textile industries during

1924 is, relatively speaking, good. Reconstruction activities are expected to supply steady employment for many workers and plentiful money will assure a brisk domestic demand. Since the boycott in China has collapsed it is also very probable that demands from that section will increase. On the whole, it appears that the cotton yarn and cotton cloth industries are in for a good year. Only one dark cloud appears to threaten the immediate future of these industries—the danger of another over-expansion as a result of a prosperous year. The floating of domestic loans for reconstruction, however, is likely to create a solution for this problem.

Franklin Process Display At Better Fabrics Exhibit

One of the most attractive displays at the Better Fabrics Exhibit conducted by the Associated Laundries and Cleaners of Providence and Pawtucket during the week of February 18th was that shown by the Franklin Process Company, of Providence, Philadelphia and Greenville, S. C. In fact, this particular display was pronounced by one of the committee to be the "queen of the exhibit."

In line with the purpose of the exhibit the Franklin Process Company displayed only fabrics containing fast-to-bleaching (and therefore fast-to-laundering) colors. Practically all the fabrics were shown both before and after washing in a commercial laundry, some of them having been laundered as many as eighteen times. This method was used to demonstrate that laundries do not injure the color in fabrics, provided the manufacturer uses the proper type of color in the beginning, the proper colors in this particular case being vat dyes applied by the Franklin Process. As most manufacturers already know, the Franklin Process dyes yarn in the wound form in a highly concentrated bath under pressure. In this way unusual penetration of the yarn is obtained resulting in exceptionally solid, even and brilliant shades.

All of the fabrics shown were labeled with the brand names and with the names of the manufacturers and sales agents so that the public could tell what to ask for should they wish to purchase fabrics containing Franklin colors in local retail stores. This scheme also made it easy for department store buyers who visited the exhibit in considerable numbers to refer to the proper sources in case they wished to stock any of the brands shown in the Franklin Process display.

Complete co-operation was established between the Franklin Process Company and the department stores during the exhibit so that the Franklin Process Company was enabled to refer interested spectators to the various department stores in Providence that carried any of the branded fabrics shown.

The branded fabrics containing Franklin Process fast colors which were shown in the exhibit were as follows: Peter Pan Ginghams, manufactured and marketed by Henry Glass & Co., New York; Chauvelisse Tissues, marketed by Fred Butterfield & Co., New York; Burton Tissues, marketed by Burton Bros & Co., New York; Blackstone and Berkeley Shirtings, marketed by Taylor, Clapp & Beall, New York; Hobart Shirtings, marketed by Van Dam & Barnard, New York; Artistic Shirts, marketed by F. Jacobson & Son, New York; Louisville Plisse Beach and Bathrobe Fabric, marketed by Westerly Textile Co., New York; Stevens Bedspreads, marketed by Clarence Whitman & Son, New York; Rosemary Damasks, marketed by Joseph L. Wilson & Co., New York; Candlewick Bedspreads, loaned by the Shepard Company department store of Providence and manufactured in the South; Redcrest Towels, marketed by James Elliot & Co., Inc.; and Androscoggin Towels, manufactured by Androscoggin Mills at Lewiston, Me.

Knitting Arts Exhibition

With the total amount of spaces sold and the number of exhibitors far in excess of previous years, the Twentieth Annual Knitting Arts Exhibition, to be held at Philadelphia under the auspices of the National Association of Hosiery and Underwear Manufacturers on April 7 to 11 at the Commercial Museum, promises to be far the most successful ever held in the history of the trade.

Chester I. Campbell, who will direct and personally guide the big exposition, is highly enthusiastic over the interest being shown throughout the industry and prophesies a most successful business getter and business building show.

"The Knitting Arts Exhibition has become the annual get-together of the hosiery and underwear trade," states Mr. Campbell. "It provides the manufacturer and jobber and the dealer an opportunity for personal contact impossible to duplicate, and its scope is not only limited to the manufacturer of finished goods, but it also provides the allied trade an opportunity to display their lines direct to the buyer."

"Our past shows have proven their worth as producers of new business, and from the interest shown in the coming show, I feel confident that it will be the most successful and beneficial that we have ever staged.

"Already the demand for space exceeds that of past years and there is no doubt that when the doors are open that every inch of the huge hall will be crowded with interesting and instructive exhibits."

From advance plans of the association, it is quite evident that Show Week will be crowded with activities. The annual convention and the round-up luncheon will be centers of high-pitched enthusiasm.

As to the exhibition itself, every conceivable kind of machinery and appliance for the manufacturing, dyeing and drying of knit goods will be shown. "Spinners' Row" will show the best kind of yarn to produce the finest of underwear.

There are a few desirable spaces.

Filling Preparation and Its Effect on Spinning and Weaving

(Continued from Page 18)

cost of preparation in their particular application to this process.

If the element of chance and change in weaving could be practically eliminated by placing a 3½ pound cone of inspected filling beneath a loom, it would unquestionably be considered the last word in improvement; therefore, it might not be unwise to accept what present achievement has to offer in the combination which approaches this ideal by supplying the magazine of an automatic loom with twenty-four bobbins that might easily contain 3½ pounds of inspected material.

Having suggested for your consideration the possibility of increasing plain and semi-automatic loom jobs, provided the filling is prepared in greater lengths for the process, let us briefly consider the effect of this change from an operative standpoint.

Under common practice a bobbin of 40/1s filling spun with a 1⅜" ring would contain approximately 1,680 yards, and would run about ten minutes in a loom operated at a speed of 168 picks per minute, weaving 36-inch goods; consequently, a weaver running eight plain looms must change filling supplies forty-eight times every sixty minutes, or once every seventy-five seconds.

On the other hand, if the same operative accepted twelve looms served with a double amount of prepared filling, they would change supplies only thirty-six times per hour, or once every ninety-two seconds.

It is also interesting to figure that if under these conditions a wound bobbin runs twenty minutes, a magazine of twenty-four bobbins would last eight hours. (This is food for thought and an excuse for action, providing you are gifted with an imagination and have a punch.)

It is true, if you increase the number of plain looms to a weaver, you increase the warp burden, but does not the same thing hold true in semi-automatic loom weaving? For, as I have previously called to your attention, the principle of rewound filling and the principle of magazine supply are identical, it being simply a question of degree; therefore, it follows that if weavers stamp the semi-automatic type of loom with their approval, it is very reasonable to expect their co-operation by the adoption of a similar time-saving principle. Arguments to the contrary simply represent fear-thought rather than forethought.

A proof of this contention is found in the present status of the rewinding art, which shows us that within recent years this country alone has absorbed nearly 50,000 winding spindles, which were fitted and equipped for rewinding strictly grey filling yarns; over 40,000 plain and semi-automatic looms are being served with the product of these spindles.

Furthermore, eight representative Eastern mills and two important Southern mills, individually operating from fourteen hundred to five thousand looms, wind and prepare all of their grey filling yarns for weaving.

In the final analysis, assuming that the foregoing statements are accepted, this is equally important to bear in mind—that cost of filling preparation applies to less than 50 per cent of cloth construction, while savings are estimated on the 100 per cent to be benefited.

In conclusion, I ask you to seriously consider these two facts:

First, that the value of a proposition of this kind might never be determined unless outside and inside forces temporarily adopt and support the child represented by the idea, and that the greatest stumbling block to progress is the man who has been doing a certain thing a certain way for many years, and will not consider any new method for fear it might change the routine of his peaceful life.

Second, I wish to emphasize this fact—that serious competitive conditions will have to be met from many quarters, unless the restrictive rules of working, which necessarily limit output, are neutralized by the adoption of such legitimate aid as may be secured in producing quality and volume.

Many of you who drive automobiles have undoubtedly at different times driven a roundabout way to reach an objective point, in order to travel on improved State roads, figuring (and quite logically, I claim) that not only would you save time by so doing, but that the slight additional cost for gasoline would be more than compensated for by the comfort and safety enjoyed, and the lessened wear and tear on both machine and driver. In other words, the direct route is not necessarily the most economical way to travel.

While this illustration may strike you as being far-fetched, it exactly describes what we find to be a fact in the application of intermediate winding processes to the textile industry.

Consolidated Textile Corp. Reports Net Profit of $54,073

Net profits of $54,073, after all deductions, are reported by the Consolidated Textile Corporation for the year ended December 31, 1923, according to the company's annual report submitted to stockholders. This figure compares with a net operating deficit of $2,177,871, after providing for depreciation and interest charges, a year ago, and a net loss of $622,150 for 1921. The company's profit and loss account shows that profits from operations, after deducting administrative, selling and general expenses, amounted to $2,591,319. Profits from operations in

the year previous amounted to only $335,119, the unfavorable report being the effect of a nine months' strike in practically all of the mills of B. B. & R. Knight, Inc.

Provision for depreciation of fixed assets is slightly below that of a year ago and amounts to $543,565, as compared with $635,000 a year ago. Profits before deducting interest amounted to $2,047,754, as compared with a loss a year ago of $299,880. Deductions from profits were $1,862,288 for interest on bonds, bills payable, etc., and $131,392 for bond interest written off, leaving net profits for the year of $54,073.

The company's balance sheet shows current assets of $16,545,605 and current liabilities of $9,062,482, making a ratio of one to the other of approximately 1.83 to 1. For the year 1922 current assets were $3,006,351 greater and current liabilities were $1,797,453 above those reported for the year just ended. Surplus of net quick assets over liabilities amounts to $5,483,124, as compared with a surplus of net quick assets over liabilities of $8,692,052 a year ago. Bills payable have been reduced from $11,826,000 in 1921 and $8,730,000 in 1922 to $6,860,000 on December 1, 1923. Accounts and notes receivable show an increase of from $8,180,212 on December 31, 1922, to $8,323,200 on December 31 last. Inventories are considerably below a year ago, amounting to $6,054,176, as compared with $9,124,014 in 1922.

The outstanding capital stock remains unchanged. The first mortgage 8 per cent bonds of the Consolidated Textile Corporation and the first mortgage 7 per cent bonds of B. B. & R. Knight, Inc., have both been reduced by the operation of the sinking funds—the one from $4,750,000 to $4,000,000, and the other from $7,500,000 to $7,393,000. Unpaid cumulative dividends on the first preferred stock now stand at $400,000. The number of stockholders has increased from 3,030 to 5,409 on December 31, 1923.

Commenting upon the past year's operations, Henry B. Stinson, secretary, in his report to stockholders, states that in 1923, the corporation, due to the successful operation of the Southern mills and the Windsor Print Works directly owned by it, showed, apart from operations of subsidiaries, substantial net profits after all charges, including interest and depreciation.

"In spite of great improvement in operating equipment and efficiency, however, the mills of B. B. & R. Knight, Inc., again showed a heavy loss, so that your corporation was fortunate in being able to show on a combined basis net profits for the year. The heavy loss of the Knight Mills was due to the fact that the New England mills, owing to the high wages and shorter working hours prevailing there, could not compete with Southern mills making similar merchandise and having much lower wages and longer working hours.

"The net profits for the year amounted to $54,073, and is in contrast to the deficit for the preceding year ending December 31, 1922, of $2,177,872.

"Current assets of your corporation on December 31, 1923, amounted to $16,545,605. The current liabilities on the same date were $9,062,482, making a ratio of one to the other of approximately 1.83 to 1. Bills payable have been reduced from $11,826,000 in 1921 and $8,730,000 in 1922 to $6,860,000 on December 31, 1923. Accounts and notes receivable show an increase of from $8,180,212 on December 31, 1922, to $8,323,200 on December 31, 1923."

Steel Heddle Plant Half Finished.

Greenville, S. C.—The Greenville branch plant of the Steel Heddle Manufacturing Company is now about 50 per cent completed. The building is of reinforced concrete, two stories and basement.

W. M. Welch, Inc., are the building contractors.

Poe Hardware Company has contract for fire protection and heating.

Parks Manufacturing Company is furnishing elevator.

Machinery will be individually motor driven. Motors have been purchased from Westinghouse Electric and Manufacturing Company.

J. E. Sirrine & Co., Greenville, S. C., are the engineers.

Alizarine Rubinole R

Under the above designation, the Grasselli Chemical Company is placing on the market their domestic manufacture of this well known color. The properties and the chemical composition of both the imported and domestic products are the same.

Alizarine Rubinole R is dyed with an addition of Glauber's Salt and Sulphuric Acid, and is very level dyeing.

The color is said to be fast to acid, alkali, stoving, steaming and washing, and its fastness to milling will suffice in most cases. Its extraordinarily good fastness to light, which is equal to that of any other color of similar shade, makes it a very valuable product, and it is not only particularly well adapted for self shades, the makers say, but is a very useful product in combination with such colors as Alizarine Blue Sap, as, Jr, Sky, the Alizarine Cyanine Greens and the Fast Light Yellows, for the dyeing of an extensive range of shades on ladies' dress goods, gentlemen's suitings, as well as carpet yarns.

White cotton effect threads are not stained.

Another advantage of this color is that it can be dyed on a chrome mordant or after chrome and its shade is only slightly affected as compared with the acid dyeing.

It is also well adapted for dyeing silk and Gloria Silk (Silk and Wool), both fibers being dyed a uniform shade. As a shading color is half wool dyeing, the wool is dyed a deep shade in a neutral bath containing Glauber's Salt.

English Expect to Lead in Fine Cottons

FOR a great many years the English cotton industry has tended to progress towards finer goods. That is to say, gradually spinners and manufacturers have lost their trade in coarse and heavy goods. During the World War a revival occurred in the coarser departments of the trade and numerous firms in that period did better than for many years previously. However, it is recognized that the future of the English cotton industry in normal times will depend to a large extent upon an increased demand in the finer and more expensive fabrics.

This tendency is only natural when it is remembered that other countries during the last few years have built mills and factories for the production of cotton goods, and these concerns for the most part have turned their attention to the commoner styles of cloth. Not many years ago numerous Lancashire manufacturers did quite a large business in goods known as T-cloths and Mexicans, especially for China and the near Eastern markets. This trade, however, seems to have disappeared and only occasionally does one hear of contracts being arranged in descriptions of this kind.

During the past twelve months, during which the depression in Lancashire has been very severe, probably the worst section has been that devoted to the production of sized shirtings, and makers of the lower qualities have experienced much difficulty in securing orders of any kind. It is quite apparent that ordinary grey shirtings are being produced in larger quantities in other countries mainly in the East.

On the other hand, in recent times there has been considerable discussion with regard to the increased demand for fine fabrics. Spinning mills in Bolton and district, where Egyptian cotton is used, have been quite busy for several months. Manufacturers who produce fancy fabrics also have done much better. The improvement in this section of the industry has been particularly due to the much freer buying by the United States of America.

It is of interest to mention that during the ten months ended October last, exports of cotton piece goods from the United Kingdom to America amounted to 144,000,000 square yards against only 80,000,000 square yards in the same period of 1922, and less than 86,000,000 square yards in the corresponding time of 1921.

This increased trade has been chiefly in Warp Satins, Poplins, Brocades, and other high class fancy materials.

Numerous Lancashire manufacturers are beginning to see the trend of events, and weaving sheds, that for many years have produced medium and ordinary qualities of cloth, are now changing production to finer goods.

It is of interest to mention that the shipments of dyed cloths from the United Kingdom for the ten months ended October last were 876,000,000 square yards against 662,000,000 square yards in the same period of the previous year, and 432,000,000 square yards in the corresponding time of 1921. On the other hand exports in plain grey goods tend to fall off.

In view of the changed conditions throughout the world the opinion is held in English cotton trade circles that the future of the industry depends very largely upon an increasing demand for the finer and higher makes of piece goods. It must be expected that, as the years go on, other countries will produce larger and still larger quantities of coarse materials. It is expected that the purchasing power of consumers of cotton fabrics will tend to increase and that the peoples of the world will want to use better quality materials. If this development takes place Lancashire has nothing to fear as she is in a position to beat all competitors when it is a question of producing high grade materials.

Progress in Co-Operative Marketing

(Continued from Page 35)

to satisfy notes given for production credit.

One of the greatest obstacles to the extension of the movement in the cotton belt is the widespread practice of mortgaging the crop in the spring to get enough money to make a crop. Some of the co-operatives are meeting this situation by organizing loan agencies under the intermediate credit act.

One interesting feature of the movement is the almost immediate acceptance of the co-operatives as factors in the business world of the South. Practically all of the money borrowed by the co-operatives came from banking houses of long standing, conservative and careful. More than $50,000,000 have been loaned by established banking and financial agencies. Very little help has been needed from the War Finance Corporation. In a number of associations all the money borrowed has come from within the home State.

Fear has been expressed that the co-operatives might get a monopoly on the cotton crop of the South and then ask their own price. This fear is answered by the fact that if the co-operatives were to do such a thing there is plenty of good cotton land in the belt that is not being devoted to cotton at present and if the associations made the price of cotton too high there would be an immediate rush on the part of independent growers to grow cotton to get the fancy prices, resulting in an over-supply and catastrophe for the co-operatives. Good business judgment demands that cotton be sold at a price that will enable the mill to manufacture it at a profit and the consumer to buy it at a reasonable figure.—Boston Transcript.

Rumanian Textile Industry Wants Protection.

There is a growing sentiment in the Rumanian textile industry in favor of an increase in import duties on textiles, particularly cotton goods, in order to protect the domestic industry which is still in the first stages of development, Acting

Operating Executives of Ga. Meet March 18

(Continued from Page 10)

waste and dirty waste from getting into your roving?

Spinning.

1. Should there be any difference in the percentage of humidity on the same numbers of warp and filling; if so, what percentage is best for good running work on each?
2. What size top roll weight is best for use with the single boss roller, on your numbers of yarn?
3. Does it increase the breaking strength to spin warp yarn on filling wound bobbins with the same twist multiple as used with the warp wind?
4. At relatively high roll speeds, is there a loss in the breaking strength of the yarn? If so, is it due to the rate of drafting, or to the high spindle speed, or other cause?
5. Have you had any experience with roving stop motions on spinning frames? If so, what were the results?
6. Is a bunch-builder profitable under all conditions?
7. What advantage has filling-wind for warp over warp wind, if any?
8. What rule for cleaning have you in the spinning department? Please state these in detail.
9. In your opinion, which is better: a large bobbin with a large ring, or a small bobbin with a small ring? Why?
10. Have roving bobbin cleaners been advantageous to your spinning room, if used?
11. How much roving do you allow on a bobbin to be taken out of the creels? Is your standard two inches, three inches, or something else?
12. Is there any way to put on filling yarn so as to prevent making slugs in the cloth without using the feeler motion?
13. What is your experience with cork rolls in the place of leather rolls?
14. What causes leather top rolls to become fluted?
15. Why is it that extra twist on the speeder makes better running spinning? Or does it?

OSCAR D. GRIMES,
Chairman, Carding Division.

W. L. PHILLIPS,
Chairman, Spinning Division.

Return your answers to Robert W. Philip, Secretary, 1017 Grant Building, Atlanta, Ga.

Analysis of Woven Fabrics

(Continued from Page 8)

transferred to design paper by examining with the naked eye; or a magnifying glass may be placed over and the order of interlacing read off to an assistant. Having recorded the interlacing of thread or pick one (1), loosen it from the cloth and proceed in a similar way with threads or picks 2, 3, 4, etc. Care must be taken that when once a given thread or pick has been decided upon for the commencement of the weave, each subsequent or consecutive reading must be started on this particular thread or pick.

As to which material—warp or filling—is the most convenient to take from the cloth, no definite rule can be laid down. In the case of cloths containing about an equal number of threads and picks per inch with the same amount of warp and filling on the surface of the cloth, then the taking out of the filling might be established as a rule. Where the warp threads are much closer set than the picks of filling it will be found most convenient to read the interlacing by drawing the warp over filling, and where there are more picks than threads the interlacing of filling should be read off.

It is of utmost importance that the counting of the warp and filling threads per inch be carefully done, as an error of three or four threads per inch would be responsible for making the resultant and reproduced fabric a higher or lower quality than the one imitated. In fine goods in which there are 65 or more threads per inch, an error of two or three threads or picks per inch would not be as important to the result, as in cloths where the threads and picks per inch are comparatively low and where abnormal slipping may result. There are two distinct methods of counting the threads and picks per inch. They are: By counting the individual number of threads in one-fourth, one-half, or one inch by means of a pick glass. Next, by counting the repeats of the weave or coloring within a given space. To obtain the highest degree of accuracy, the latter method is commended wherever applicable.

Czechoslovakia.

Owing to an improved demand for yarn, both for foreign and domestic trade, cotton mills are at present operating close to normal capacity.

Cotton Goods

New York.—Cotton goods markets continued rather dull for the week, although there was a somewhat better feeling toward the end of the week. There is an increasing belief that the bottom has been reached and that a good buying movement will develop within a few weeks. It is felt that if the cotton markets can hold steady for a week or two a good business may be expected in cloths.

Inquiry was good last week and came from large buyers who are in need of various goods. Prices showed a great deal of irregularity and as many goods that have sold very slowly during the past few weeks have not been priced in accordance with the lower cotton price and sales prices last week on such lines naturally showed a drop. Many lines of print cloths, sheetings and convertibles are still below a parity with the new low prices on cotton.

There was some good business in print cloths in the past few days. On Wednesday, some estimate, about 100,000 pieces were taken. These were reported for both speculative and for regular converting. There was some fair print cloth business during the week—and considerable business declined, because mills would no longer consider prices bid. This trading has not been general. Some sellers have been encouraged more than a little, and state they believe this is the start, which will gradually broaden—and work through other kinds of cloths.

Sheetings were very irregular. It was stated that some 4-yard 37-inch goods were available from second hands at 10¾ cents lower than mills would accept. A fair amount of business has been done on 6.15s at 7½ cents and 5.50s at 8½ cents this week. Some other light weight goods were sold to the bag trades. Most quotations are nominal and in the absence of firm bids many agents say they do not assume to guess what mills will do.

Sateens and twills were dull. Prices are irregular as many numbers have not been asked for and traders say they do not know what they are worth.

In the combed goods division, the new prices at which Cantons have sold, were the subject of quite some discussion—25 cents for the 96x100 single end, and 18½ cents for the 96x64 single end. The silk and cotton market has been a hard one to follow, with prices and price ideas changing quite some—and often, of late. Spots of 34-inch, 80x56 Tussahs sold at 27 cents.

There have been numerous indications of improvement in the last week or so. Inquiries have been greater in number than they have been in some time, and actual business put through has been better. However, there is no basis yet for calling business good, except in the comparison with what has been going on during the early part of this year. Further improvement in finished goods is expected, in view of the fact that stocks of numerous items are low, and it is known that buyers have been holding off placing orders as long as possible. The opinion is that, for nearby needs, the element of risk in the purchasing of cotton goods today in most varieties is as small as it can be under any possible business conditions. It is evidently an appreciation of this fact that has resulted in the gray cloth inquiry that has been reported in the last week or so.

Cotton goods prices in this market were quoted as follows:

Print cloths, 28-in., 64x60s	7⅛
Print cloths, 27-in., 64x60s	6⅞
Gray goods, 38½-in., 64x64s	9½
Gray goods, 39-in., 68x72s	11
Gray goods, 39-in., 80x80s	14
Brown sheetings, 3-yard	15
Brown sheetings, 4-yard	13
Brown sheetings, standard	16
Ticking, 8-ounce	28
Denims	24½
Staple ginghams	15

American Silk Hosiery Disappearing From Turkey.

American hosiery firms were able to compete successfully in the Turkish market from 1919 to 1922 and at one time supplied half of the imports but there are now almost no American silk stockings on the market except old stocks, Vice Consul R. S. Dursley reports. Imports of silk and artificial silk hosiery for women are estimated at $82,500 during 1923, of which Germany furnished about 80 per cent. The practical elimination of American hosiery by German competition, although partly due to the depreciation of both Turkish and German currency with respect to the dollar, may also be attributed largely to the intensive methods used by German manufacturers in cultivating this market.

The Yarn Market

Philadelphia, Pa.—The yarn market was quiet last week, with prices irregular and showing a further decline on some counts. The finer counts of carded yarn declined slightly, while the coarser numbers held firm. Dealers report that while present yarn prices are very attractive, but that yarn consumers are not inclined to buy and that it is not any easier to get buyer and seller together than it was before the last price decline. Yarn buyers continued to purchase only what yarn they must have for their immediate needs. It is estimated that at least three-fourths of the present yarn orders call for prompt delivery or not past the end of this month and the middle of April.

Continued decline in cotton quotations, lack of interest in cotton yarns, increasing surplus of yarn stocks, here and among the spinners, and growing competition among the dealers and spinners for fresh orders, have combined to produce another break in yarn rates, this latest reaction being the most severe thus far this month in the case of many counts, bringing them down to where they were selling a little less than six months ago, when spot cotton in New York was quoted at around 26 cents a pound.

Spinners' prices are still well above those quoted in this market, and it is very hard to quote figures that represent actual values, due to the difference between dealers and mill prices.

Insulators were reported in the market for small quantities of yarn, ranging in number from 6s to 12s, tinged stock. An order for a moderate quantity of 20s 2-ply carded chain warp was reported placed by a Philadelphia towel manufacturer at a price of 48½ cents. Some little interest was also reported from lace manufacturers, one of which paid 49 cents for a small quantity of 20s 2-ply skeins.

Yarn prices were published in the market as follows:

Two-Ply Chain Warps.

2-ply 8s	44	a...	2-ply 24s	50	a51
10s	45½	a...	2-ply 26s	51½	a52
12s to 14s	46	a47	2-ply 30s	53	a54
2-ply 16s	48½	a...	2-ply 40s	64	a65
2-ply 20s	48½	a49	2-ply 50s	74	a...

Two-Ply Skeins.

8s	43½	a...	40s	64	a...
10s to 12s	44½	a46	40s ex	70	a72
14s	46½	a...	50s	74	a75
16s	47	a47½	60s	81	a...
20s	47½	a48	Tinged Carpet—		
24s	50	a...	3 and 4-ply	40	a...
26s	51½	a...	White Carpet—		
30s	53	a...	3 and 4-ply	43	a44

Duck Yarns.

3, 4 and 5-ply—			3, 4 and 5-ply—		
8s	43½	a...	16s	47½	a...
10s	45	a...	20s	48	a48½

Single Chain Warps.

10s	45	a...	24s	51	a...
12s	45½	a...	26s	52	a...
14s	46½	a...	30s	53	a54
16s	47½	a...	40s	66	a...
20s	48	a...			

Single Skeins.

6s to 8s	43	a...	20s	48	a...
10s	44	a...	24s	51	a...
12s	45	a...	26s	51½	a52
14s	46	a...	30s	53	a54
16s	47	a...			

Frame Cones.

8s	43½	a...	22s	48½	a...
10s	44	a...	24s	50	a...
12s	44½	a...	26s	51	a...
14s	45	a...	28s	52	a...
16s	45½	a...	30s	55	a...
18s	46	a46½	30s ty'g in	53	a...
20s	47	a48	40s	64	a...

Combed Peeler Skeins.

2-ply 10s	65	a...	2-ply 50s	87	a...
2-ply 20s	68	a70	2-ply 60s	90	a95
2-ply 30s	73	a75	2-ply 70s	1 00	a1 05
2-ply 36s	78	a80	2-ply 80s	1 15	a1 20
2-ply 40s	80	a82			

Combed Peeler Cones.

10s	55	a56	30s	63	a65
12s	56	a57	32s	68	a70
14s	57	a58	34s	70	a72
16s	58	a59	36s	75	a77
18s	59	a60	38s	77	a78
20s	60	a...	40s	78	a80
22s	60	a61	50s	85	a87
24s	61	a61½	60s	90	a95
26s	61½	a62	70s	1 05	a1 10
28s	62	a63	80s	1 15	a1 20

Carded Peeler Thread Twist Skeins.

20s, 2-ply	61	a...	36s, 2-ply	70	a...
22s, 2-ply	62	a...	40s, 2-ply	75	a...
24s, 2-ply	63	a...	45s, 2-ply	79	a...
30s, 2-ply	66	a...	50s, 2-ply	88	a...

Carded Cones.

10s	52	a...	22s	56	a58
12s	53	a...	26s	60	a61
14s	54	a...	28s	62	a63
20s	55	a56	30s	63	a65

Japanese Buying Chinese Cotton.

Predominant among the buyers of China cotton are the Japanese in Shanghai and Tientsin, who are purchasing both for export and for consumption in their mills located in China, Commercial Attache J. Arnold informs the Department of Commerce. Shipping space for this cargo is reported scarce with prices growing firmer. The Chinese mill holdings of cotton are small, while the position of foreign operated mills is comparatively better. The controversy at Tientsin regarding the settlement of cotton contracts is still unsettled.

Indian Cotton Goods Production 50 Per Cent Above Pre-War.

The average pre-war output of the Indian cotton mills was 1,105,494,000 yards of cloth comprising 854,141,000 yards of grey and bleached piece goods, and 251,353,000 yards of colored, according to the Indian trade commissioner to London. For the fiscal year ended March 31, 1923, totalled 1,725,217,000 yards, including 1,271,723,000 yards of grey and bleached, and 453,494,000 yards of colored piece goods. The pre-war average production of cotton twist and yarn was 646,757,000 pounds, of which 478,538,000 were counts 1 to 20, and 146,363,000 were counts 21 to 30. During the fiscal year ending March 31, 1923, the Indian mills produced 478,549,000 pounds of counts 1 to 20, and 208,959,000 pounds of 21s to 30s, and 18,339 pounds of other yarns.

Want Department

Textile Plant Location

Best in South. See our proposition. Box 113, Hillsboro, N. C.

Wanted—Position as cloth room overseer. Am now employed as same, but desire a change. Am experienced with silk fancies, cotton fancies and novelty goods. Best of references. Address L. W. C., care Southern Textile Bulletin.

Wanted

Position as overseer of spinning. Have had long experience as overseer on coarse and fine numbers, short and long staple cotton. Can guarantee proper results with good level roving. G. H. F., care Southern Textile Bulletin.

Mill For Sale.

A good 3,000-spindle mill, with space for 10,000 spindles, and good hydro-electric power. M. B. Pitts, Elberton, Ga.

For Sale.

Liddell hand baling waste press. Excellent condition. Size of bale 27" x 54". $125.00 f. o. b. Charlotte. Address R. S. S., care Southern Textile Bulletin.

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1—No. 154 Economy Baling Press, very cheap. Perfectly new.

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Because of its better protective qualities makes frequent repainting unnecessary and so gives better protection at lower cost.

It is a natural combination of flake silica-graphite. The vehicle is best boiled linseed oil. It will not peel, crack or flake off because of the natural elasticity of flake graphite, while the silica is an anchor that withstands wear.

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The fee for joining our employment bureau for three months is $2.00, which will also cover the cost of carrying a small advertisement for one month.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only $1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern textile industry.

WANT position as overseer weaving. Long experience on wide variety of goods. Can get good production, with small percentage of seconds. Best of references to show character and ability. No. 4127.

WANT position as overseer weave room, large or small. Now employed as overseer and giving satisfaction but wish larger place. Experienced on wide variety of goods, white and colored. Good references. No. 4128.

WANT position as overseer carding or spinning, or assistant superintendent. Am experienced man with long record of successful service. Best of references. Can come on short notice. No. 4129.

WANT position as overseer carding. Competent man who thoroughly understands carding and preparatory processes. Character and habits good, steady work and a hustler for production. No. 4130.

WANT position as overseer weaving, beaming or slashing. Have had 12 years' experience in above departments. At present overseer with 1,000 looms on checks and chambrays and am giving satisfaction. Age 40, married, good references. No. 4131.

WANT position as roller coverer. Experienced, reliable and first-class man in every respect. Best of reference. No. 4147.

WANT position as superintendent or will accept place as overseer carding or spinning. Experienced in some of the largest and best mills in the South and can get results References. No. 4132.

WANT position as overseer carding. Am reliable man of sober habits, good manager of help and thoroughly understand carding. Good references. No. 4133.

WANT position as superintendent of weave mill, or would accept place as overseer weaving in large mill. Can get production at right price and understand quality weaving methods. Best of references. No. 4134.

WANT position as superintendent or will take place as overseer, carding spinning or weaving, prefer weaving. Now employed in good North Carolina mill, but wish to change for better place. Best of references. No. 4135.

WANT position as overseer carding in good sized room. Prefer Georgia or Alabama. Eighteen years as overseer in good mills. Now overseer in large mill but have good reasons for wishing to change Age 48, have family have good textile education and can run the job. No. 4136.

OVERSEER carding, now employed, wishes to make change. My experience and training fit me to handle large job in good mill. Good manager of help, first-class references as to character and ability. No. 4137.

WANT position as superintendent yarn mill of 10,000 to 15,000 spindles. Age 46, married, long practical experience, 12 years as superintendent. Now employed but have good reasons for making change. References. No. 4138.

WANT position as slasher tender or second hand in spinning. Well qualified for either place. Best of references. No. 4139.

WANT position as roller coverer. Am expert in roller covering and can demonstrate my ability in short time. Now employed in good mill. Want to correspond with mill needing man of unusual ability. No. 4140.

WANT position as overseer of carding. Long experience in handling a combination of both rooms and can get excellent results. Good references. No. 4148.

WANT position as electrician with good mill or some other manufacturing plant. Have had 15 years' experience. Can furnish excellent references. No. 4149.

WANT position as superintendent, or would accept place as carder or spinner. Practical man of long experience as both superintendent and overseer. Best of references. No. 4150.

WANT position as overseer carding or spinning, or master mechanic and electrician. Employed at present but have good reasons for making a change. Can come on ten days' notice. First-class references. No. 4151.

WANT position as overseer carding and spinning. Am 44 years old and have had 20 years' experience as overseer and assistant superintendent. Can furnish best of references. No 4152.

WANT position as overseer plain weaving or overseer cloth room. Have had more than 25 years' experience on practically all kinds of goods. Am qualified to handle either position. Age 46, have family. Best of references. No. 4153.

WANT position as overseer spinning. Have had long experience in the spinning room and have taken a course with the I. C. S. Good references. No. 4154.

WANT position as overseer of slasher department. Age 32, eight years' experience as slasher and beamer. Good references. No. 4154.

WANT position as overseer weaving. Long experience on wide variety of fabrics and am capable man in every respect. Good references from past and present employers. No. 4156.

WANT position as superintendent of tire yarn or fabric plant, or fine combed yarn mill. Now located in East, but have had 6 years' experience in South. Long term of services superintendent and overseer and am reliable man who can get excellent results. Excellent references. No. 4157.

WANT position as overseer cloth room. Long experience on lawns and sheetings and can guarantee satisfaction. Good references. No. 4158.

WANT position as overseer of small card room or second hand in large room. Am also excellent card grinder. Long experience in good mill. A-1 references. No. 4159.

WANT position as superintendent. Have had 18 years as such and am now employed in my 19th year. Can handle yarn or cloth mill and am high class, practical man. No. 4160.

WANT position as overseer carding or spinning, or both. Past experience and training fits me to handle job in efficient manner. Good references. No. 4161.

WANT position as overseer spinning, or overseer weaving. Long experience in good mills in both departments. Reliable, steady man of good habits. Excellent references. No 4162.

WANT position as master mechanic. Now employed. Experienced in both steam and electric plants and can handle work in satisfactory manner. Good references. No. 4163.

WANT position as overseer spinning. experienced for many years on both carded and fine combed yarns. Would like to correspond with mill needing high-class man. Excellent references. No. 4164.

WANT position as overseer weaving. Experienced on many different fabrics and am competent and reliable. No. 4165.

WANT position as superintendent. Fitted by training and experience to handle large mill in satisfactory manner. Good references. No. 4166.

WANT position as superintendent; yarn mill preferred. Now superintendent of good yarn mill and have held job for over two years. Giving entire satisfaction. Thoroughly understand carding and spinning. 15 years as superintendent and overseer. Good references. No. 4167.

WANT position as superintendent of cloth mill. Long experience and can give references from many mill executives to show excellent record of past service. No. 4168.

WANT position as superintendent of yarn or cloth mill. Now employed as night superintendent but wish day job. References to show ability character and past record. No. 4169.

WANT position as superintendent or will take overseer's place in any department. Thoroughly qualified to handle any room in the mill. Best of references. No. 4170.

WANT position as superintendent or carder and spinner. Will go anywhere. Prefer yarn mill of 5,000 to 30,000 spindles. Can come at once. Best of references. No. 4176.

WANT position as carder or spinner. Ten years' experience in carding, spinning and winding. Now employed, but will change on short notice. Age 37, with family. References from present and past employers. No. 4172.

WANT position as superintendent. Practical man, good pusher, can get quality production on all classes of yarns. Good references. No. 4173.

WANT position as overseer spinning. Practical man of long experience on practically all yarn counts made in South. Good references. No. 4174.

WANT position as overseer spinning. Have had 20 years' experience in spinning, spooling and warping in some of best mills in South, and West, both white and colored work. Age 36, married, sober now employed as overseer. Good references. No. 4175.

WANT position as superintendent or would take overseer of carding and spinning. Many years' experience as superintendent and overseer and am well qualified in every respect. Best of references. No. 4171.

SUPERINTENDENT or carder and spinner desires position. Would take place as night superintendent in large mill. Prefer mill on plain work. Satisfactory references. No. 4177.

WANT position as superintendent of mill or plain weaving or hosiery yarn. Am now 32 years of age and can give good references. Now employed as superintendent. No. 4178.

WANT position as superintendent or assistant superintendent in medium size mill. Would consider weave room in large mill. Best of references. No. 4179.

WANT position as spinner. Age 48. Have had 20 years' experience and can give excellent references. No. 4180.

WANT position as superintendent of finishing in yarn plant. Long experience in large Eastern mill and have excellent record of service. Fine references. No. 4181.

WANT position as carder or spinner, or box comber. Am specialist in combed yarn work and have had a long term of satisfactory service. Excellent references. No. 4182.

WANT position as shipping clerk. Four years' experience and can handle big job Now employed as shipping clerk. Gilt-edged references. No. 4183.

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WANT position as overseer finishing department, white or colored goods. Have had 16 years' experience in cloth room, 12 years as overseer on white and colored goods, wet and dry finish. Best of references. No. 4185.

WANT position as overseer spinning. Have had 12 years' experience as overseer and can furnish best of references. No. 4186.

WANT position as overseer weaving. Can handle either plain or fancy work both colored and white Now employed. First-class references. No. 4187.

WANT position as superintendent, carder, spinner or carder and spinner. Have acceptably filled overseer's position for long term of years. Best of references. No. 4188.

WANT position as master mechanic and engineer. Experienced and skilled mechanic of long experience. Best of references. No. 4189.

WANT position as overseer spinning. 12 years as overseer and 5 years as overhauler in spinning and twisting. Good references. Address No. 4190.

WANT position as superintendent, or overseer weaving or designer. Have specialized in fancy weaving and designing and can show samples that have proved business getting. Long record of satisfactory service in fine weaving plants. Good references. No. 4192.

WANT position as superintendent of small yarn mill or carder and spinner in larger mill Have had 20 years as overseer. Good references. No. 4191.

WANT position as superintendent or carder and spinner. Now employed but want better job. First-class references. No. 4193.

WANT position as superintendent. Prefer weaving mill. Practical man of long experience on great variety of fabrics. Good references No. 4194.

WANT position as overseer carding anywhere in South. Long experience and also graduate of I. C. S. Good references. No. 4197.

WANT position as overseer spinning, twisting or winding at not less than $40 weekly. Have had 25 years in the mill. 10 years as overseer, have run present room 3 years. Good references. No. 4195.

WANT position as overseer weaving. My experience has been as overseer in a number of large weave rooms and many kinds of goods. Excellent references. No. 4196.

WANT position as overseer of small weave room on plain goods. Am hustler for quality production and good manager of help. Good references. No. 4198.

WANT position as carder or spinner or superintendent. Now employed. Many years as both superintendent and overseer and am competent worker. Good references. No. 4199.

WANT position as carder. Have had 7 years as overseer and can give first-class references. No. 4200.

WANT position as superintendent of yarn or weave mill, or overseer weaving. Long experience in carding, spinning and weaving and winding and can give good references. No. 4201.

WANT position as superintendent of yarn mill. Prefer plant on tire fabrics. Experienced man of good habits and character and can give good references. No. 4202.

WANT position as overseer weaving on any kind of plain work; 12 years as overseer and have always been able to get the goods. Now employed but have good reasons for changing. Good references. No. 4203.

WANT position as spinner. Have held present job for over 6 years and made good record. Can get quality production at right price. Good references No. 4203.

WANT position as carder or carder and spinner. Am hustler for production and quality and know how to keep costs down. No. 4204.

WANT position as superintendent of yarn mill. Have had 12 years' experience. Have finished course in grading and stapling cotton. Know mill business thoroughly. Best of references as to character and ability. No. 4206.

WANT position as carder in small mill or second hand in large mill. At present employed by good mill but desire to change. Good references as to character and ability. No. 4207.

WANT position as carder. Thoroughly understand the carding process and have long term of experience in good mill. Best of references. No. 4208.

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WANT position as superintendent. Am competent executive and good manager of help, experienced in all departments of mill and man of good character and habits. Best of references. No. 4210.

WANT position as superintendent of medium sized yarn mill or assistant superintendent in large mill Prefer mill in Georgia, Alabama or Missippi. Long experience as overseer spinning. Have held present place as assistant superintendent for many years, making 4s to 40s single and ply cones, tubes, skeins and warps. References. No. 4111.

WANT position as superintendent or overseer carding and spinning. Am 41 years old, have had 20 years' experience as overseer and superintendent of mills in Georgia. Can give good references as to character and ability and can come at once. Good manager of help. No. 4113.

MASTER mechanic and chief engineer of extraordinary ability will consider proposition by March first. Fine machinist and mechanical engineer. Correspondence strictly confidential. No 4114.

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